

THE  
COMMAND AND GENERAL STAFF SCHOOL  
QUARTERLY

REVIEW OF MILITARY LITERATURE

---

MAJOR FRED DURING, *Editor*  
MAJOR G. J. BRAUN, *Assistant Editor*

---

FOREWORD

The object of this publication is a systematic review of current military literature, through cataloging articles of professional value, in selected military and naval periodicals, in the domestic and foreign field.

Articles from foreign periodicals are treated by translations of titles and digests of contents; material of particular importance is covered more extensively in a Section of "Abstracts of Foreign-language Articles."

A "Library Bulletin" Section lists books, recently accessioned, which are of particular significance.

This Quarterly is published as a guide to modern military tendencies and to inspire vigorous thought on the subjects treated.

The opinions expressed by authors are not necessarily official.

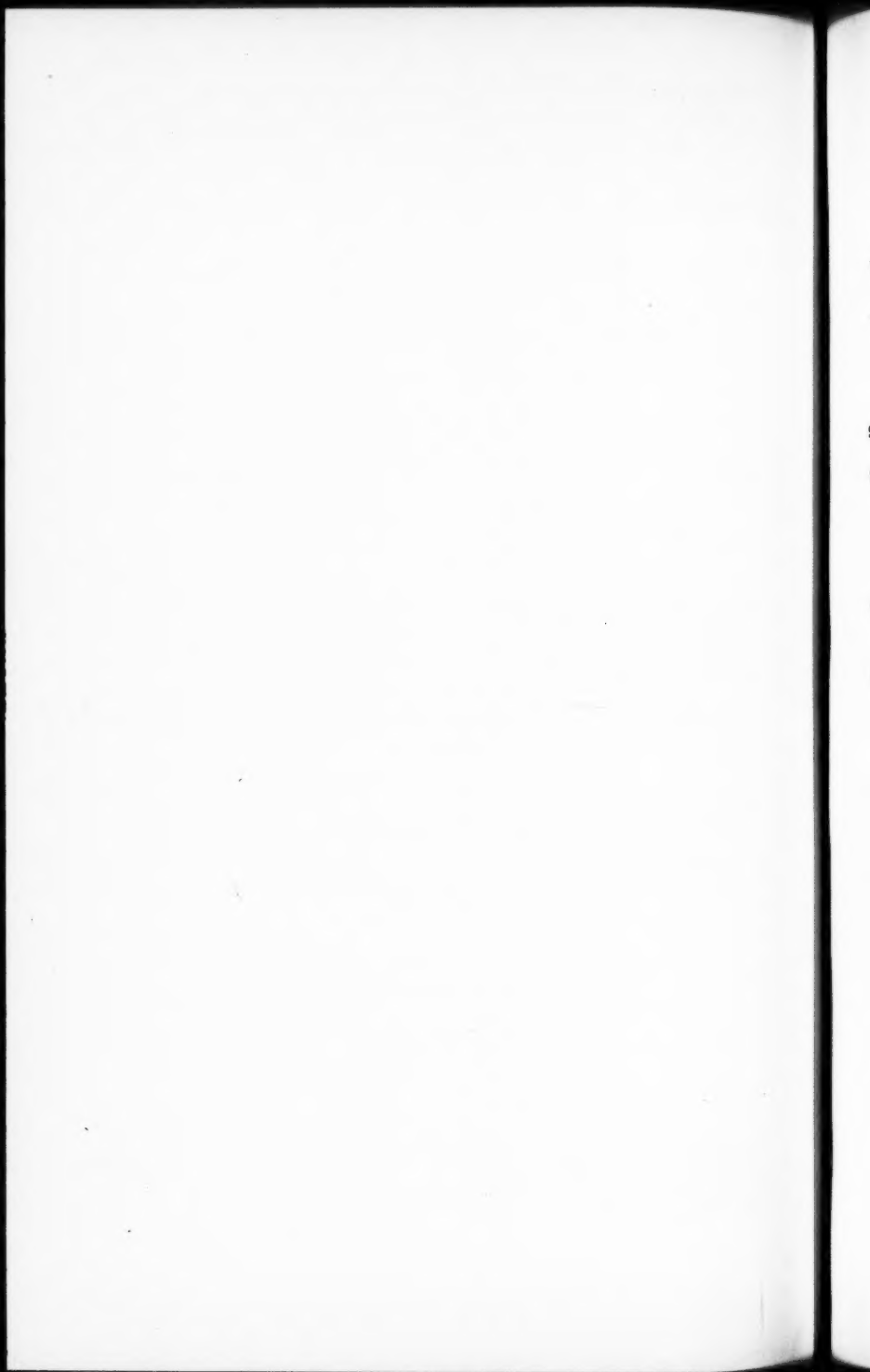
---

September, 1936

*Third Quarter*

---

THE COMMAND AND GENERAL STAFF SCHOOL QUARTERLY—REVIEW OF MILITARY LITERATURE, is published by The Command and General Staff School at Fort Leavenworth, Kansas. Entered as second-class matter August 31, 1934, at the Post Office at Fort Leavenworth, Kansas, under the Act of March 3, 1879. Subscription rate: One year in the United States and possessions, Cuba and Mexico, \$1.00.





**THE COMMAND AND GENERAL STAFF SCHOOL  
QUARTERLY**

**Review of Military Literature**

Volume XVI

September, 1936

Number 62

---

**CONTENTS**

	Page
<b>Section 1—ORIGINAL MILITARY STUDIES.....</b>	<b>5</b>
<b>Section 2—ABSTRACTS OF FOREIGN-LANGUAGE ARTICLES.....</b>	<b>51</b>
This Section contains abstracts of important articles from foreign military periodicals; the remaining articles for each magazine are listed in Section 4.	
<b>Section 3—DIRECTORY OF PERIODICALS.....</b>	<b>97</b>
A guide to Section 4 and Section 7.	
<b>Section 4—CATALOG OF SELECTED PERIODICAL ARTICLES.....</b>	<b>99</b>
A systematic review of the contents of selected military periodicals. Foreign-language periodicals are digested to a degree to furnish an adequate idea of contents and significance.	
<b>Section 5—ACADEMIC NOTES, C. &amp; G.S.S.....</b>	<b>151</b>
Reprint of current School material, which affects instructional procedure or tactical doctrines.	
<b>Section 6—LIBRARY BULLETIN.....</b>	<b>187</b>
This Section lists books, recently accessioned, which are of particular significance.	
<b>Section 7—READERS' GUIDE AND SUBJECT INDEX.....</b>	<b>189</b>
All subject-headings are arranged in alphabetic sequence and can be consulted like a dictionary. Note also List of Periodicals Indexed and Key to Abbreviations.	

---

**THE COMMAND AND GENERAL STAFF SCHOOL PRESS  
FORT LEAVENWORTH, KANSAS**

1704—9-1-36—1400

# LIST OF CONTRIBUTORS

	A	B	C	D
Braun, Maj. G.J.	2	9	2	
Brees, Maj.Gen. H.J.				1
During, Maj. F.	5	17	2	
Heidner, Lt.Col. S.J.	1			
Johnson, Capt. W.G.	2			
Johnston, Maj. E.S.				1
Moore, Maj. C.R.	1			
Tate, Capt. F.J.	1			
Wash, Lt.Col. C.H.	1			

A—Foreign-language Periodicals; B—English-language Periodicals;  
C—Abstracts of Foreign-language Articles; D—Original Studies.

Maj. G.J. Braun: *Militär-Wochenblatt* (11 March-18 May 1936, inclusive); *Wissen und Wehr* (January, February, March 1936).

Maj. F. During: *Militärwissenschaftliche Mitteilungen* (January, February, March 1936); *Pioniere* (February 1936); *Revue de Cavalerie* (January-February 1936); *Revue Militaire Suisse* (January, February, March 1936); *Rivista di Artiglieria e Genio* (November-December 1935, January, February 1936).

Lt.Col. S.J. Heidner: *Sanct Christophorus* (January, February, March 1936).

Capt. W.G. Johnson: *Bulletin Belge des Sciences Militaires* (January, February, March 1936); *Revue d'Infanterie* (January, February, March 1936).

Maj. C.R. Moore: *Revue Militaire Francaise* (January, February, March 1936).

Capt. F.J. Tate: *Revue d'Artillerie* (January, February, March 1936).

Lt.Col. C.H. Wash: *Revue de l'Armée de l'Air* (January, February 1936).

**Section 1**  
**ORIGINAL MILITARY STUDIES**

**CONTENTS**

	Page
Essentials of Leadership.....	5
Field Service Regulations of the Future.....	13

**ESSENTIALS OF LEADERSHIP**

A Lecture by

Major General H.J. Brees, United States Army

The subject of this lecture is one about which volumes have been written. I claim no originality. On the contrary, I quote freely from articles I have read on this subject although I have endeavored to incorporate my own individual views.

One may roughly divide all mankind into two general classifications: leaders and followers. This is true no matter what walk of life or what profession, business, or pursuit. There are leaders and followers in all. We are concerned here with military leadership, although it is an interesting comparison to note whether the qualities we deem essential in military leadership are also deemed essential qualities of leadership in other professions or business. What are considered necessary qualities to differentiate the leader from the follower can only be deduced by a study of the lives and characteristics of past and present leaders. Pertinent also to the question is a determination as to whether these qualities are innate or are cultivated and developed.

It is probable that no one person ever possesses *all* the qualities the various writers consider essential. Such a person would be a super being. But it is probable that all leaders, and by that we mean successful leaders, do possess in common a number of so-called essential characteristics. So let us first determine what we mean by "essential" and what we mean by "leadership." "Essential" is defined as "important in the highest degree; indispensable to the attainment of an object; indispensably necessary." An apt synonym would be "needful." A "leader" is defined as "a chief, a commander, one having authority to precede and direct." By adding the suffix "ship" we find

that "leadership" means the "quality or ability to lead." Consequently this lecture is intended as an endeavor to determine, if possible, from out of the mass of desirable qualifications those "needful or indispensably necessary qualities" that one must possess to become a successful leader of military men.

In reading articles on this subject, one is impressed by the variety and scope of qualifications considered desirable by various writers. It is my endeavor to select those that are considered absolutely necessary. Many of you will probably disagree with me, for one's point of view is always colored by one's ideas and ideals. To arrive at a conclusion, therefore, I propose to list some (probably not all) of the characteristics or qualities considered necessary and from these to select those which seem to be predominant or which, in my opinion, are the essential or absolutely necessary ones.

I have consequently arranged, alphabetically, a considerable number of qualities or characteristics which various writers have listed as needful or desirable qualities of leadership. This list is by no means all inclusive. Let us analyze these and see if we can determine certain ones which are inherent to all or most leaders and consequently necessary to all to a greater or lesser degree. In conning over this list, we note a number which are practically synonymous, or so co-related as to be treated together.

#### *Desirables*

- |                       |                      |                          |
|-----------------------|----------------------|--------------------------|
| 1. Ambition           | 15. Example          | 29. Professional fitness |
| 2. Age                | 16. Fairness         | 30. Personal appearance  |
| 3. Courage            | 17. Honor            | 31. Personality          |
| 4. Character          | 18. Initiative       | 32. Perseverance         |
| 5. Coolness           | 19. Intelligence     | 33. Prestige             |
| 6. Confidence         | 20. Imagination      | 34. Psychology           |
| 7. Common sense       | 21. Industry         | 35. Popularity           |
| 8. Duty               | 22. Judgment         | 36. Responsibility       |
| 9. Decision           | 23. Justice          | 37. Resourcefulness      |
| 10. Dignity           | 24. Knowledge        | 38. Self-control         |
| 11. Energy            | 25. Knowledge of men | 39. Self-knowledge       |
| 12. Enthusiasm        | 26. Loyalty          | 40. Sense of humor       |
| 13. Executive ability | 27. Physical fitness | 41. Tenacity of purpose. |
| 14. Endurance         | 28. Physique         |                          |

**AMBITION.**—Strictly speaking, ambition is the eager or inordinate desire for self-advancement or preferment, honor, and power. Properly controlled, it is a desirable characteristic, for without ambition one is apt to stagnate or become self-satisfied. One of our outstanding military leaders was intensely ambitious, but, coupled with his ambition were other traits

which counterbalanced his tremendous ambitions and made success possible. Yet in the end there is no doubt that his inordinate desire for power led to his undoing. I refer to Napoleon. Ambition within reason is necessary, for it leads to the development of other desirable traits. Unbridled ambition becomes ruthlessness and frequently license.

**AGE.**—Age, endurance, physical fitness and physique are more or less inter-related and will be considered together. It has been said that war is a young man's game. However, age is a comparative term. One man may be old in his youth because of a frail physique, a lack of physical fitness, or because of physical defects. Another may be strong and sturdy in old age. The leaders of the lower echelons must perforce be in their early maturity to withstand the hardships and the hurly-burly of physical contact inherent in those echelons. On the other hand, the man of age may, because of experience and physical fitness, be fully capable and qualified physically to command the higher echelons. The end of our Civil War found few, if any, of our commanders and soldiers beyond middle age. The conclusion of the World War found armies commanded by men in their fifties to the case of Hindenburg, who was seventy-odd years of age.

Physical fitness is absolutely essential regardless of age or physique. If one is not fit physically, his judgment, his mental ability, and all that goes with it must suffer. If one is not physically fit, it is impossible to stand the stress and strain incident to warfare. Endurance diminishes and with it comes all the aftermath of the uncoordinated action of the physical and mental make-up.

The matter of physique, and by that we mean the physical make-up of a man, including posture and carriage, is something of not relatively great importance. The tall, sturdy, well-set-up man attracts attention and invites confidence, but unless he has other attributes, this is one of the least of the desirable qualities. The thin man is frequently possessed of infinite endurance. The man who carries excess baggage is handicapped and, if medical records are correct, is less apt to be able to withstand the rigors of active campaign.

**COURAGE.**—By courage we mean both physical and mental courage. Probably the majority of human beings are possessed of a considerable amount of physical courage, if physically fit. Moral courage is far more rare. The power to take action

which will result in loss of life, or to do things which one knows are right and proper, but which will have unpleasant repercussions, demand moral courage. Many of us are inclined to temporize, to procrastinate, or to dodge the issue. This is a form of moral cowardice. The leader of a squad or platoon must have physical courage. He may be a moral coward, but unless he has the physical courage his usefulness as a leader is at an end at once. On the contrary, the leader of a division, or a corps, or an army, must have moral courage in the highest degree. Physically he may be a craven and get away with it.

**CHARACTER.**—Character is that innate something which is hard to describe. It may refer to one's reputation for morals or for probity, or may be the sum of distinguishing traits or characteristics. Closely allied to character is personality; yet to my mind there is a distinct difference. A man of character engenders respect which in turn engenders loyalty and obedience. Yet a man of high character may lack other essential traits. Conversely, a man may possess all the other desirable traits of a leader and still fail as one because of undesirable traits of character. Character implies moral cleanliness, force, ardour, sincerity and will to do, to say nothing of personal magnetism. General Robert E. Lee is probably as fine an example as any of this most desirable characteristic.

**COOLNESS.**—Coolness means the ability to remain calm and self-possessed in times of stress and danger. It flows from knowledge and physical fitness.

**CONFIDENCE.**—This is assurance in one's self. It springs from thorough knowledge of one's profession and a perfect physical and mental balance.

**DUTY.**—Duty, responsibility, and honor go hand in hand. It means that inner something which is greater than self. It is devotion to the job. It is that transcendent something to which the military man devotes his life. It is allied to patriotism but yet is something more. It means the assumption of responsibility without regard to the attendant trials and tribulations incident thereto.

**COMMON SENSE.**—Common sense is the ability to take action along simple and sane lines with no frills and no extraneous matters to distract the mind from the main issue. It is the quintessence of the application of the practical to the theoretical. And yet, how many of us fail to apply simple and practical methods to practical issues. Common sense implies

good judgment. To say that a leader has good judgment is just another way of saying he has common sense.

**DECISION.**—To the natural born leader, if there is such a person, the power of decision is a second nature. It is inherent in the man. The leader must be decisive. He must have confidence in himself and here again he must have knowledge and be physically and mentally fit. A poor decision promptly rendered and rigorously followed is infinitely better than no decision at all. Vacillation has no place in the make-up of a real leader. However, wrong decisions if made too frequently lead to loss of prestige and lack of confidence. The real leader is never a straddler.

**DIGNITY.**—Dignity and personal appearance are closely allied. It implies carriage, decorum, and dress. The leader who behaves in an undignified manner will have an undignified command which may even be a rabble. The leader who is careless and sloppy in his dress will have a sloppy command. By dignified demeanor I do not mean the stuffed shirt type. With him dignity is merely a front to cover his ignorance or lack of knowledge.

**ENERGY.**—Energy, enthusiasm, and industry go hand in hand. It is an old saying that a command takes its tone from its commander. One who is energetic, enthusiastic, and industrious will find that that spirit permeates his organization. He may be the driver type, but men are willing to be driven if they know the "Old Man" is working as hard as they are. If he is the persuasive type, he will engender energy, enthusiasm, and industry by his force of example. But here again we have to go back to physical fitness as a basis. No commander who is not physically fit can imbue his command with his enthusiasm and industry.

**EXECUTIVE ABILITY.**—This means the ability to direct men along definite lines to secure coordination of effort. With our large modern and diversified staffs, coordination is essential and a leader must have the knowledge and ability to so shape their efforts as to reach the desired result with the minimum of friction and lost motion.

**EXAMPLE.**—The force of example is a most potent factor. It is a trait or characteristic which a leader should be very scrupulous in developing. He should set the standard by which he gauges others. I said a moment ago that a command takes



its tone from its commander. In no respect is this more true than in the force of example.

**FAIRNESS.**—Fairness and justice are the same. No commander can play favorites and get away with it for any length of time. He should be most careful to hear both sides of a question whenever possible, but if time does not permit, and the occasion demands, justice must be rendered firmly, promptly, and impartially. A leader who is a square-shooter can demand much of his command. And he can be sure of getting results willingly, freely, and gladly if he is known as a square-shooter. When necessary, action may be ruthless provided it is just and impartial. No display of anger or lack of self-control must be shown. Action must be cold-blooded but fair.

**INITIATIVE.**—Initiative, imagination, and resourcefulness may well be coupled together. While not synonymous they are so closely related that one merges into the other. Initiative is the trait of taking needed action without necessarily waiting for orders. In order to take initiative, one must have imagination and must have resources within himself. To put it in the vernacular, a leader must keep one jump ahead of the other fellow, be it his enemy or his staff.

**INTELLIGENCE.**—Intelligence is the faculty of understanding. It goes without saying, therefore, that a leader must know his business and have a greater and more complete grasp of his profession than his fellow men. His mind must be adaptable, and he must be capable of absorbing new ideas, new thoughts, new trends, and new developments promptly and easily. Woodenness is certainly not a trait for a leader. The mere fact that he is a leader presupposes an intelligent mind.

**KNOWLEDGE.**—Under knowledge I am grouping the headings of knowledge, knowledge of men, professional fitness, and self-knowledge. In other words, I consider the term as all-embracing. To me it is self-evident that a leader must not only know all about his profession and all its ramifications, but he must also have a broad general knowledge as well. This means constant study and reading. He must be well grounded and well rounded. He must not only know military history, but he must be up to date and must be able to look into the future as far as it is humanly possible to do so. Especially must he know men, for it is with men that he is dealing. He must not only know them individually but must know them in the mass. He must have a knowledge of individual psy-



chology, and he must have a knowledge of mass psychology. If a leader knows his men, can talk their language, knows their problems, and can convince them he has their interests at heart, he can do with them almost anything he wishes. This can come only by association with them and by command of them in the lower grades. In modern warfare it is next to impossible for high commanders to have the close personal contact of by-gone days when men were led by force of example. General Pershing was almost a myth to the men in the A.E.F.; yet he is probably one of our greatest commanders. Those division commanders who were seen by their men at the front were almost idolized. A leader who tries to bluff his way is inevitably doomed. As P.T. Barnum put it, "You can fool some of the people all of the time; all of the people some of the time; but you can't fool all of the people all of the time."

Aside from mental knowledge, if I may so express it, a knowledge of men, knowledge of one's self is just as important. Every leader, or potential leader, should subject himself to the closest possible personal scrutiny and find out how he ticks. In this way only can he ascertain his shortcomings and thus take steps to overcome and correct his personal deficiencies.

**LOYALTY.**—It is an unfortunate thing that loyalty is all too often one-sided. There is one thing a commander should never forget and that is loyalty begets loyalty. Leaders expect loyalty from those under them. In return they should be equally loyal to them. Firmness and discipline are no bar to loyalty. Ability, a square deal, that intangible something called personality will invariably produce a spontaneous loyalty which the French call *esprit-de-corps*. If a leader expects loyalty, he must give it himself, both to his superiors and to his subordinates. He must look after them and fight their battles. A leader or anyone else who gripes, knocks, criticises, or gossips can neither give loyalty nor expect it.

**PERSEVERANCE.**—Perseverance and tenacity of purpose are one and the same thing. This means the intestinal fortitude, or guts if you will, to carry on to the bitter end. It means the sticking to a thing, whole heartedly. It is the reverse of being a quitter. When everything is black and things look hopeless, it takes will-power of the highest sort to keep plugging along. I consider Grant's statement, "I propose to fight it out on this line if it takes all summer," classic.

**PRESTIGE.**—Prestige is a dominant factor if it rests on a firm foundation of character and ability. If not, it is like a house built on the sand. In this life we are prone to judge men by what they do in the present, not by what they have done in the past. "By their deeds ye shall know them."

**POPULARITY.**—Equally dangerous is popularity. Probably nothing is more ephermal or evanescent. Popularity, based on a foundation of worth and ability, is a most desirable attribute, but unless it is so based it is short lived.

**SELF-CONTROL.**—Self-control is most important. There is a saying that to control others one must first learn to control one's self. Mastery of one's self means mastery of others. Self-control inspires confidence. Lack of self-control means lack of moral fiber.

**SENSE OF HUMOR.**—While a desirable trait, it is by no means an essential attribute. Nevertheless, a sense of humor helps materially to oil the pathway of life and to bring a ray of light into the gloom of darkness. It eases and appeases the mental and physical tension in times of stress.

The above is an attempt at a brief and hasty analysis of attributes considered desirable in leaders by writers in different walks of life. It is certain that no one man can possess them all—at any rate not in equal proportion. The attempt should now be made to cull from the list those that are deemed essential, whether inborn or acquired. We should also consider the type or kind of leader we have in mind. All of us are potential leaders of greater or lesser degree, by virtue of the commissions we hold. However, the placing of a commission in our hands does not make all of us leaders in the true sense of the word. Some of us may be born leaders; whereas others of us may be better fitted potentially as advisers or staff officers. Here we are not concerned primarily with the leaders of small units, but we are vitally interested in the essentials of leadership that go to make division and corps commanders. So our conclusions should be based on that premise.

It is difficult, if not impossible, to arrange them in order of priority. Some are innate in the individual. Others are acquired. Some may be stronger or more potent than others and thus achieve a balance whereby the potency of one overcomes the weakness of another. Those which I consider essential are few in number but they are of such a nature that from them

flow the others less necessary but nonetheless desirable. I list them as follows:

*Essentials*

Force of character

Physical fitness

Knowledge of one's profession, of men, and of self

Courage, both physical and moral

Common sense and judgment

Tenacity of purpose

Executive ability

And last, but not least, that intangible something known as personality.

---

**FIELD SERVICE REGULATIONS OF THE FUTURE\***

By Major E.S. Johnston, Infantry

---

[In order to demonstrate that his recommendations, which were published in the preceding issue of the "Review of Military Literature" (No. 61, June 1936), are practical, Major Johnston has prepared suggested passages from an imaginary edition of the Field Service Regulations, which are contained in the following Appendix.—Editor.]

---

**APPENDIX**

**(Order Promulgating Field Service Regulations)**

\* \* \* \* \*

**(Heading)**

These Field Service Regulations include the basic doctrine of war of the army.

This doctrine is applicable to forces of all types, and to operations of every character.

It is presented in terms expected to require minimum revision by reason of changes in organization, equipment, and armament.

Detailed discussions of the employment of contemporary units are to be found in other appropriate publications.

**(Ending)**

\* \* \* \* \*

---

(NOTE: This article does not necessarily convey the views of this School, but is the expression of the opinions of the author.—Editor.)

\*Copyright 1935, by E.S. Johnston.

TABLE OF CONTENTS  
Part I.—Fundamentals of War.  
Part II.—Operations of War.  
Part III.—Administration.

\* \* \* \* \*

PART I  
FUNDAMENTALS OF WAR

A.—NATURE OF WAR

*Definition.*—War is a conflict, primarily by physical force, among political bodies such as nations.

*Purpose of war.*—The proper purpose of war is to *gain a better peace*. The value of peace is measured in terms of justice, security, and prosperity.

Therefore, war is properly resorted to in order to impose a policy—or prevent imposition of a contrary policy—in the interests of justice, security, and prosperity, when the matter at issue is of the requisite importance and when the methods of peace have failed to accomplish the object sought.

To accomplish the object for which the war is fought, it is necessary to reduce the will of the enemy to resist,—to reduce it to such a level that the enemy no longer will wage war effectively to prevent the attainment of the object sought.

*Elements of war.*—The ultimate *object* of any military operation is therefore *to reduce the hostile will to resist*, to such a level as will permit accomplishing the purpose of the operation, the campaign, or the war.

The *means* utilized in war include all available forms of combat power appropriate to the purpose.

The application of the means is influenced by the *conditions* under which they are employed.

It is also influenced by the probable *consequences* should the method of application fail of its purpose.

War, therefore, resembles any other activity in that it involves the expenditure of *energy*, under certain *conditions*, in spite of *resistance*, and with due regard to the *consequences of failure*, in order to gain an *object*.

B.—FACTORS INVOLVED IN WAR

The factors which influence the operations of war are therefore the:

*Object*

*Means available and opposed*

*Characteristics of the theater*

*Consequences of failure.*

The *object* is in turn influenced by the *effect desired* and by the other factors listed above.

The *means available and opposed* may be listed as follows:

Political factors

Economic, including financial, factors

Psychological factors, including personal and racial characteristics; morale; and training

Military factors, including military intelligence procurable; location of forces; material means (including logistic factors) as to movement, as to intensity of combat power, as to life of combat power, and as to control (including signal communication, military morale, and military training).

The *characteristics of the theater* include distance; obstacles due to weather, terrain, and the works of man; and visibility conditions due to weather, ground, hours of daylight and darkness, twilight, phases of the moon, and the presence or absence of artificial illumination and artificial fog.

The *consequences of failure* are inherent in each situation.

The primary problem in war is to gain *unity of effort* in the employment of the *means available* against the *means opposed*, under the *conditions of the theater*, with due regard to the *consequences of failure*, in order to accomplish the *object*.

C.—ERRORS TO BE AVOIDED

Errors in war or in training for war are in the main due to:

Faulty information

Faulty evaluation of correct information

Faulty rules of action.

Of these, *the error of using faulty rules is the least excusable.*

The history of war is replete with instances evidencing the grave consequences of the blind following of such rules.

The tendency to follow rules is ingrained in mankind, and cannot be eradicated. It is, moreover, a logical and useful tendency. Reliable guides for action facilitate quick and correct action in emergency. If reliable guides are not made available,

however, the strain inseparable from war will result in the use of unreliable guides. This tendency is most accentuated at times of crisis, when it is most important that the action taken be correct.

*It is therefore necessary to provide reliable and practical guides for action in war.*

Such guides are given in the principles hereinafter noted.

#### D.—PRINCIPLES

*Definition.*—A principle is a *basic truth*. It is therefore applicable to all cases. Consequently, it is a reliable guide. It states a condition: namely, that certain causes produce certain effects.

*Differentiation from doctrine.*—A doctrine is a *teaching*. Sound uniform doctrine assists unity of effort. To be sound, doctrine must be based on principles. Principles therefore constitute the essential basis of doctrine.

*Differentiation from a method.*—A method is a *procedure*. The defect of a method, if used as a guide, is that it does not apply to all cases. To adopt a method or a pattern of methods as a guide is to set up a mental attitude predisposing toward the application, to all cases, of measures appropriate only to some cases. Such error is not rectified by stating the method as “generally” or “usually” applicable, because in practice there is no general or usual case in war; in war, all situations are special cases, each differing in some respects from others.

*Differentiation from policy.*—A policy is a *settled course of action* or *method*. The soundest policy is to follow that course of action which is based on the application of principles in the particular situation.

*Purpose of principles.*—The purpose of principles is to express knowledge in the *simplest correct terms*, so as to make it available for *instant use* in practice. The formulation of principles not only assists in *determining a correct doctrine*, but simplifies the *teaching* and *understanding* of the doctrine. The utilization of principles also accustoms the mind to *rapid and accurate selection of appropriate methods* of action, so that, even under the strain of war, the correct decision may be formed by mental processes so rapid as to be almost unconscious and instinctive.

*Method of formulating a principle.*—A principle is *not a slogan*, nor is it a *mere caption* implying a number of unstated

ideas. It is a definite and complete statement of fact. To be reliable, it must be always true. To be practical, it should cite the causes which effect the stated result. By thus citing the factors which determine the result, it invites attention to the influence of the factors, and so indicates appropriate methods of action.

*Principles of war.*—The results of action in war are determined by the factors previously cited in these regulations. No guide for action in war is true unless based on these factors. No such guide is complete unless it includes all the factors.

The one fundamental and reliable principle to be used as a guide in war is simply that *the effective employment of combat power to gain unity of effort is determined by these factors.*

There is no substitute for the elementary fact that everything in war depends upon the situation, and that sound methods are evolved by the true appreciation of existing facts and by the application of correct judgment in order to produce plans and execution suited to existing conditions.

The foregoing fundamental principle of war may be expressed in greater detail as follows:

*The correct decision as to any matter in war is determined by:*

*The object.*

*The means available and opposed, including:*

Political factors

Economic, including financial, factors

Psychological factors, including personal and racial characteristics; morale; training

Military factors, including military intelligence procurable; location of forces; material means (including logistic factors) as to movement, as to intensity of combat power, as to life of combat power, and as to control (including signal communication, military morale, and military training).

*The characteristics of the theater, including:*

Distance

Obstacles due to weather, terrain, and the works of man

Visibility conditions due to weather, terrain, hours of daylight and darkness, twilight, the phases of the moon, and presence or absence of artificial illumination and artificial fog.

*The probable consequences of failure.*



This principle is further developed into a series of subordinate principles in the discussion which follows:

Academic appreciation of principles is merely a first step toward effective practice. Effective practice also requires:

*A detailed practical knowledge of the capabilities and limitations of the means.*

*Ability to estimate correctly the influence, on the employment of the means, exerted by the characteristics of the theater.*

Such knowledge and ability are acquired only by practical experience.

The discussion, hereinafter, deals with the basic characteristics of combat power, as influenced by the characteristics of the theater. It points out basic methods for employing combat power, which may serve as a groundwork for particular methods required for particular situations.

#### E.—CHARACTERISTICS OF COMBAT POWER

Combat power has fundamental characteristics as follows:

*Direction*, which implies an objective.

*Position*, which is location, and constitutes the reason for movement.

*Intensity*, which is the magnitude of combat power.

*Life*, which is the ability to endure.

*Control*, which is susceptibility to regulation.

*Direction*.—Direction implies an objective.

An *objective* is the physical thing at which combat power is aimed.

The *object* is the purpose; it is a condition to be created or maintained.

It is a principle that the correct object in any situation is determined by the *effect desired*, the *means available* and *opposed*, the *characteristics of the theater*, and the *probable consequences of failure*.

The ultimate effect desired is to reduce the hostile will to such a level that the enemy no longer resists the policy for which the war is fought.

Each campaign, operation, or combat has an appropriate object, contributing to the object of the war. The degree to which it contributes thereto depends upon the limitations imposed by comparative means, the theater, and the consequences of failure.



Should the means be inadequate under existing conditions to attain the object desired, a *less far-reaching object* should be set until means increase, hostile means decrease, or conditions of the theater change. However, means which are inadequate for one simultaneous effort, may be adequate if used in *successive concentrated efforts* to attain intermediate objects which, in the sum, equal the final object sought.

It is also a principle that the correct *objective* in any situation is determined by the *object*, the *means available* and *opposed*, the *characteristics of the theater*, and the *probable consequences of failure*.

The objective—a physical thing—may be moving or fixed. It may be enemy troops, population, or resources. But, whether it is in place or moving, the objective always occupies a *position in space*, whether in the air, on the ground, under the ground, on the water, or under it.

The aim of the commander should be *so to place his combat power with reference to this objective, as to gain maximum effect from his means, with the least expenditure*. The proper purpose of the commander is not to seek combat for the sake of fighting, but to gain his object with the minimum necessary use of combat, employing combat only as necessary to attain the desired object.

Offensive and defensive combat, in their various forms, are methods of action to be chosen, separately or in combination, according to the requirements of the situation. The comparative advantages and disadvantages of the offensive and the defensive vary with the factors already noted: the object, comparative means, characteristics of the theater, and probable consequences of failure. The comparative advantages and disadvantages of offensive and defensive combat vary from age to age, from year to year, even from one moment to another, and in one theater as compared with another.

The defensive, particularly when it can utilize the characteristics of the theater to advantage, may permit relatively weak forces to oppose relatively strong with a degree of success otherwise impossible, but may fail to impose a decision unless combined with offensive action. The attacker very frequently, but not invariably, enjoys the advantages of the initiative; the combatant who lacks the initiative is penalized by the necessity of suspending action until the hostile intentions are at least in part disclosed.

*The judicious combination of the offensive and defensive* should be the aim of the commander, the particular methods to be employed being adapted to his object, comparative means, the theater, and the consequences of failure so far as they can be foreseen.

The utilization of the *double or multiple objective* may have the advantage of causing the enemy to yield one objective while protecting another, or to yield all of them by attempting a greater effort than is appropriate to his available means.

The selection of appropriate objectives derives its importance from the fact that it is the first element to be settled in any plan, and that a wrong choice may involve wasted effort. For this reason, the influence of oversimplified and therefore faulty rules of action—a dangerous practice—is particularly to be guarded against when settling upon objectives. Among the maxims to be regarded with grave suspicion are the following:

*That the object is always to destroy the hostile will to resist, or to destroy the hostile armed forces.* The degree of reduction in the hostile will to resist is relative, like everything in war, and depends upon the factors cited above. The degree of damage to be inflicted upon the hostile armed forces is likewise relative, and dependent upon the same factors.

*That the objective is always the enemy's armed forces.* The hostile armed forces are important only to the degree in which their activity endangers the object, whether of the entire war or at the moment.

*That the objective is always the enemy's main forces.* Assuming that some portion of the hostile armed forces constitutes the proper objective at the moment, the proper objective may be either the main forces or detachments thereof, depending on the factors cited above.

*That if balked in the effort to gain a given objective, the effort to gain it should be continued, or that the effort should be continued with a change in methods, or that the effort should be suspended and another objective selected.* These possibilities represent methods, each of which should be utilized when appropriate, their appropriateness being conditioned by the factors cited above.

---

*Position.*—The value of position, or location, lies in the degree to which it favors the employment of combat power.

Position is the basis of movement. Movement is merely *change of position*. Its purpose is to *gain a more favorable position, in order to improve the effect of available combat power*. A purposeless movement is a waste of time and energy. In addition to the advantages to be obtained by movement to any position, there must be considered the practicability of arriving there with means adequate for the purpose, and the probable consequences should the movement fail.

It is therefore a principle that the correct movement in any situation is determined by the factors already cited: the *object*, comparative *means*, the *characteristics of the theater*, and the probable *consequences of failure*.

There is no virtue in movement merely for the sake of movement. There are occasions when the correct action as to movement is not to move.

In the mind of the commander the movement of his force should be regarded not as an even flow, but as *a series of bounds from one appropriate position to another*. Whether the bounds are separated by actual halts at the successive positions, depends upon the factors cited above.

The successive positions to which combat power is moved are *objectives*. They are to be selected in accordance with the discussion on that subject, preceding. They are not selected primarily with a view to combat, but with a view to *accomplishing the object with the minimum necessary combat*. The commander should not seek combat if his proper object can be accomplished by movement alone. But when the enemy may intervene to force combat, the aim of the commander should be to seek such a position with reference to the enemy that the proper object may be attained by the mere presence of his force at that point; or, if this is impossible, that the fight which follows will insure attaining the proper object with the least expenditure of power.

When opportunity is lacking to utilize double or multiple objectives, the same advantages may be gained in part by utilizing *more than one route* for the advance on a single objective.

---

*Intensity*.—Intensity of combat power involves all the factors which condition war. It is not a matter of men alone, nor of weapons, but also involves such factors as transport, supply, training, morale, and effective signal communication.

The purpose of the application of combat power of any given intensity, is to influence enemy action, as desired, either by inflicting actual loss, or by the threat thereof.

Problems as to the application of intensity of combat power are fundamentally problems as to the allotments to be made of available means. The appropriate allotment of means is influenced by the *object*, by the *means available* and *opposed*, by the *characteristics of the theater*, and by the probable *consequences of failure*.

*It is therefore a principle that the correct allotment of forces for any task is determined by these factors.*

Two aspects of intensity are concentration and dispersion. A degree of dispersion is necessary to effective operations. An excess of concentration can be as damaging as a deficiency. In any particular situation, *the correct concentration and the correct dispersion merge together into identity*, thus constituting the *proper distribution* of power for that case.

The correct allotment of forces should be conceived not in terms of superiority or inferiority, but in terms of *adequacy* for the task. Application of the *principle* that correct allotment of means is determined by the factors noted above, shows that the proper *policy* is that any force should have power appropriate to its task. This is true of all forces from the largest to the smallest. A nation should have armament appropriate to its policy; or, if it cannot or will not afford that armament, a policy appropriate to the armament which it can or will afford. The smallest force, in like manner, should have an object appropriate to its combat power, and combat power appropriate to its object.

Adequacy of power is to be gained, not necessarily by concentrating large forces, but by making available, in adequate amounts, the proper *types* of forces. A relatively small force of appropriate character, used at the critical time and place, may produce effects out of all proportion to its size. For example, one method of off-setting other deficiencies in intensity of combat power, or of increasing existing intensity, is to improve mobility or to make relatively great use of movement. Unless mobility is superior to that of the opponent, relatively great use of movement may of course involve an eventual decrease in intensity, owing to severe physical wear and tear.

Assuming that an engagement is desirable or necessary, both the offensive and the defensive involve decisions as to whether to meet strength with strength, or to oppose strength to weakness. Thus the defender may oppose power to power at the point of impact, or he may meet the attack with relatively weak forces and employ his strength in maneuver to take the attacker at a disadvantage at a later critical juncture. Similarly, the attacker may thrust with strength against weakness, or with strength against strength. The correct method to be adopted is determined in the particular case by the object, relative means, the characteristics of the theater, and the consequences of failure.

For the attacker, the choice between a penetration of the hostile front, or a maneuver against the flank or rear, or combinations of the two, is determined by the same factors.

Both the offensive and the defensive may employ the method of *fixing* the enemy with part of the force, while *maneuvering* with the remainder. The fixing operation may be performed by attacking, by threatening attack, by defending in place, by delaying action, or by combinations of these methods. The method to be used depends upon the factors cited in the principle given above. Methods may vary widely even in short periods of time owing to variations in the object, in relative mobility, intensity, life, morale, training, and signal communication, in the conditions of the theater, and in the probable consequences of failure.

The character and amount of the means to be allotted for fixing missions and for maneuver missions are also matters to be determined in the same manner. On occasion very small forces may be adequate for fixing; on other occasions, large forces may be required. In this case, as in all others, no rule-of-thumb can be given.

In like manner, as for any operation of war, the degree of permissible separation of forces is determined by the utilization of the same principle.

The test is whether a given disposition will permit adequate *unity of effort*. A discerning study of history will show that appropriate separations of forces have been relatively great under conditions when:

The force divided was so superior to the opposition, as to permit allotment to each portion of such *intensity*

of combat power as would be equivalent or superior to that which could be brought against it.

*Mobility* of the forces so separated was such as to permit the effects of their action to be felt by the enemy before the effects of his action, against any portion of the forces, could be too seriously felt.

The combat *life* of the unit so separated was relatively great, either by reason of its organization and equipment, or of the nature of the theater, or of both. Therefore inferior means could maintain themselves relatively long against superior.

*Control* of forces so separated was adequate for the purpose.

The values of the factors determining the appropriate separation may change in the course of a generation, of a few years, of a campaign, or even of one action.

The *main effort* of a force, whether on the offensive or the defensive, is the effort made by the greater part of the force. The *decisive effort*, whether made by a small or a large part of the force, is the effort which, at the moment, is expected to produce the desired decision. The *main theater*, or locality of the main effort, may be merely the scene of secondary operations, while comparatively small forces may be employed in a *decisive theater*, location of the decisive effort, elsewhere.

Comparative strength may be influenced by two methods: by increasing one's own combat power relative to the enemy's, or by decreasing his. Possible methods of decreasing hostile strength in the critical localities are by diversions, or by propaganda, surprise, or any other method of decreasing hostile morale.

Means which are inadequate for producing the desired effect on a broad front or to a great depth, may be rendered adequate by the judicious selection of the method of operations: for example, by making a relatively intense effort on a narrower front, or by employing the means successively in a succession of efforts which will in time produce the final effect desired.

---

*Life*.—Life is *ability to endure*, to resist the wasting effects of campaign and battle.

Hence the importance of security (*protection*).

The purpose of security is to *conserve the life of combat power*.

The degree of security required in a given situation is influenced by the *object*. Security may be increased by increasing the mobility, the intensity, the controllability of one's own *means*, and by decreasing those qualities of the *opposing means*. *Characteristics of the theater* may be employed for security by utilizing distance, conditions of visibility, or obstacles. The degree of necessary security also varies with the *probable results of failure* to provide adequate safety.

It is therefore a principle that in any situation the proper security measures are determined by the *object*, comparative *means*, the *characteristics of the theater*, and the *probable consequences of failure*.

Security may be furthered by offensive measures, such as diversions, other attacks or threatened attacks, paralysis of the hostile signal system, and weakening enemy morale through propaganda and surprise.

Defensive measures for security include the use of security detachments, the adoption of measures of readiness in the main forces, and the utilization of characteristics of the theater for defensive purposes.

As for any other force, the detail of a security detachment involves decisions as follows: The object of the detachment; what means from those available can be spared for the constitution of the detachment; what means are made desirable by the opposition which will be encountered; what means are made desirable by the characteristics of the theater; what the probable consequences will be should the detachment not be allotted certain means. It may be possible to make a relatively weak detachment adequate for the object, by allotting it mobile rather than powerful means, especially if distance, obstacles, and/or visibility favor its operations. On the other hand, it may be necessary to allot it means having great intensity of combat power, so that it can endure severe combat. It may also be necessary, if means are inadequate, to assign the force a mission involving a less ambitious object than was contemplated prior to casting up accounts in terms of relative means, the theater, and the consequences of failure.

---

*Control.*—Control is *regulation*. Its purpose is to attain *unity of effort* for one's own force, and to disrupt unity of effort in the enemy's. It includes everything involving stability, both



physical and moral,—maintaining one's own stability, and upsetting the enemy's.

The establishment of a proper control system is relatively a matter in the hands of a commander. Object and means are determined by higher authority; modifications in the character of the theater may involve effort beyond the capacity of the means; the consequences of failure are inherent in the situation. But through appropriate training, through fostering the morale of his own troops and decreasing hostile morale, and through effective use of his own signal-communication system and effective attack on the enemy's, a commander may personally influence both his own control and the enemy's, so as to gain great advantages.

It is a principle that appropriate acts to insure one's own control and to upset the enemy's are determined by the *object*, comparative *means*, the *characteristics of the theater*, and the *probable consequences of failure*.

Effective control calls for responsibility commensurate with authority. On the other hand, maintenance of sound morale requires that responsibility be proportioned according to the means made available to a commander to enable him to control events. Higher authority having assigned responsibility, it is incumbent upon it to allot proportionate means.

The primary methods of obtaining unity of effort are through *coordination* from above or through *cooperation*. Coordination implies unity of command. Unity of command, however, is not an end in itself, but merely a method of obtaining *unity of effort*. As between the individuals concerned, determined mutual loyalty is more important than the particular command system adopted.

Both coordination and cooperation have elements of strength and weakness. History shows that cooperation has often failed where unity of command might well have succeeded. Unity of command, however, has also failed through lack of a pervading cooperation. Moreover, coordination (unity of command) cannot be obtained everywhere; there are necessarily both horizontal and vertical cleavages in the command system.

For example, if control of supporting auxiliaries is retained by higher authority, the lower echelons supported by these auxiliaries must rely on cooperation with such auxiliaries for unity of effort. Moreover, if such control is decentralized to



lower echelons, the higher commander to that extent relinquishes unity of command in his own person.

Again, immediate unity of command over a given space cannot be provided everywhere. There must, for example, be certain flank units, adjacent to each other, which will be under different—perhaps very distant—commanders. Such units must rely on cooperation.

The characteristics of personnel may critically influence the appropriate control system. For example, commanders of limited training, or characterized by other limitations, may be incapable of effective utilization of certain means. It may be desirable in cases of this category to cause supporting means to cooperate with such commanders, rather than to place them under their command. The difficulty of presenting the effects of this factor in the theoretical instruction given both in peace and war, should be met by unremitting efforts to give it due emphasis.

The primary problem as to control is *to select those echelons of command, and those localities in space, where, in a given situation, coordination and cooperation should, respectively, receive primary emphasis.*

Relative centralization of control may be desirable to strike, or to parry, a powerful blow. Quick action to meet emergencies may call for decentralization. Certain means may properly be centralized while others are decentralized.

Relative security may justify decentralization, while relative insecurity may call for centralization. Thus, as pointed out under the discussion of movement, a highly-centralized advance by bounds may be desirable when any or all of the following exist to the requisite degree: a nonaggressive object; a relatively weak, immobile, unaggressive, or untrained force; adequate signal communications for control; a relatively strong, mobile, aggressive or trained enemy; a locality where obstacles, visibility, or the nearness of the enemy are disadvantageous to us; or serious consequences to be apprehended in case of surprise. On the other hand, contrary conditions may call for decentralization and for the minimum restrictions on movement. These conditions also apply not only to advances but to flank retrograde movements.

The appropriate control system can only be determined by a study of all the factors. In any particular situation, changes in the control system may be necessary from time to

time, and may require provision therefor in advance. Thus an attack may begin with a highly-centralized control system to deal a powerful blow in order to disrupt a strong defense by unified employment of all the means according to a methodical schedule. Thereafter, method may properly give way progressively to the demands of rapidity through the decentralization, by successive stages, of the various means. This in turn may continue until pursuit culminates in a decision. But, should the enemy withdraw in good order or be reinforced, rapidity may in turn have to yield to a methodical approach and the re-centralization of means in order to repeat the attack or to defend.

Every variety of situation between the two extremes may be encountered, and a sound training for war requires practice to meet them all effectively.

### *Training*

The character and amount of training to be given any individual or unit is determined by the *tasks* to be performed, by the characteristics of the personnel and of the other *means* to be apportioned to the unit, by the *training means* available, by the character and equipment of the *enemy* to be encountered, by the *conditions of the theater* in which operations are to occur, and by the probable *consequences of failure* to attain a proper degree of training.

### *Timing*

Among the important measures to insure unity of effort and to disrupt hostile unity, is timing. The proper timing of operations is among those control measures whereby a relatively weak force may produce great effects.

Against an alert and aggressive enemy, the formation of habitual practices as to timing is particularly dangerous. The proper timing of operations is determined by the *object*, relative *means*, the characteristics of the *theater*, and the *probable consequences of failure*. Rules-of-thumb as to timing are to be regarded with the gravest suspicion.

On the offensive it may be well to vary daylight attacks with night attacks. It may be well to launch daylight attacks at times other than dawn, if for no other reason than to forestall hostile readiness, to gain surprise, and to weaken hostile morale.

When frontal and flank attacks are used in conjunction, they may be launched simultaneously, or either may precede the other, according to the situation.

#### F.—MILITARY ORGANIZATION

Organization is the *mechanism of control*. Its purpose, therefore, is *unity of effort*. The factors governing organization are accordingly those which affect control. The principles of military organization may be stated as follows:

The effectiveness of any method of organization depends on *unity of effort in control* of the *means* against the *means opposed*, under the *conditions of the theater*, with due regard to the *consequences of failure*, in order to accomplish the *object*.

The appropriate organization and equipment, including armament, of any unit are determined by the *object* of the unit, the *means available* for organizing and equipping it, the *means with which it will be opposed*, the *characteristics of the theater* of action, and the *probable consequences of failure*.

Military organization presents continuous problems not only in peace but in war, and these problems affect commanders of all grades.

There are two general types of military organization:

One which is evolved prior to use in active operations, and is properly intended to meet as many of the tests of campaign as possible; and

That which is employed in campaign, as a modification of the preceding type, in order to set up on the spot the control system best fitted to meet the particular situation.

The basic or tabular organization merely provides a basis for necessary modifications. The specific organization formed in each situation is an expression of the ability of the commander concerned.

As was indicated in the foregoing discussion of control, changes in the organization required to deal effectively with changes in the situation, may occur very rapidly in a given operation.

In determining any system of organization, the first consideration is *what the unit to be organized is to do*. The next is

to consider what *opposition* it will encounter: the fire-power, shock-power, mobility, vulnerability, morale, training, and signal system of the enemy. The *theater of operations* must then be studied, to determine what agencies can be used there. The *means available* for organizing the element must then be considered. If the importance of the task is relatively great, and the *consequences of failure* therefore relatively important, the result may be to give the unit a relatively high priority in the distribution of available means.

Difficulties in determining the most appropriate organization are greatest when the unit may operate in widely-different theaters, against widely-varying enemies. Such a situation increases the need for a flexible basic organization, and for an understanding in the military profession at large as to how it may best be modified to meet particular situations.

The combat means available may be classified as close-combat troops and as long-range fire auxiliaries, and as relatively mobile and relatively less mobile troops. In addition, there are the logistic means pertaining to transportation, replacement, supply, and evacuation.

Combat elements are organized primarily to fight, since their effectiveness depends upon their use as combat power, either actual or by threat.

Combat is fought by combat groups of varying size and types. In order to avoid the necessity of forming these groups, entire, on the field, it is desirable to provide, as a basis for the field forces of the nation, a unit which has incorporated within it, as permanent organs of its being, the various agencies required for the formation of such groups.

The *division* is a unit of this nature. It is the *smallest permanent unit including both close-combat troops and long-range fire auxiliaries, and is designed as a flexible mechanism, able to meet successive situations quickly by the rapid regrouping of its elements into a series of fluid combinations.* Self-sufficiency for supply and evacuation may be desirable, but is not fundamentally an essential requirement for the division.

As the basis of organization for the field forces of the nation, divisions may be of various types: for example, divisions *primarily for power*, divisions *primarily for mobility*, divisions for fortress duty, divisions primarily for protection of lines of communication and of bases, or divisions primarily for occupation of territory seized by other troops. Special

divisions may, for instance, be provided for defense of certain localities, thus releasing other troops for more mobile operations. Special divisions may also be formed for mountain operations, for desert operations, and for other duties calling for particular characteristics.

The division organized primarily for power, whether separate from, or identical with, the highly-mobile division, is historically the basis of the organization of the field forces. It requires adequate mobility to make its power effective.

All types of division require security characteristics necessary for maintaining themselves against their probable enemies, and should include such additional security features as may not unduly sacrifice their primary qualities. All also require a flexible control system adequate for complete utilization of their other characteristics.

Air units may also be organized into divisions suited for those primary roles of aviation which call for the utilization, in a unit of division type, of various categories of aircraft and their auxiliaries.

The units next higher than the division may be of intermediate nature, designed to provide a framework for a certain number of divisions, whether permanently or temporarily assigned, and for any desired auxiliary troops. Such intermediate units may, however, be omitted, and divisions be organized immediately into larger units which are primary subdivisions of the field forces; assignments of divisions to such units may also be permanent or temporary.

The units higher than the division are constituted in a manner radically different from divisions, in that they are not adapted to quick internal groupings to meet rapid changes in the situation. When time permits, such regrouping within the higher units may be possible, as when methodically preparing to receive or deal a powerful blow. But such centralization is relatively temporary, and must soon give way to more normal decentralization when the capacity for movement is restored.

The basic element of any unit is that to which the organization of other elements conforms. It is determined by the object, relative means, the theater, and the consequences of failure. In fixed defenses and fortress troops, for example, the long-range fire auxiliaries may be basic, while the close-combat elements may be auxiliary: to protect the others. But in the more mobile ground forces intended for a war of maneuver,

the close-combat troops are the basic element, because the accomplishment of the primary object of the forces depends essentially upon them. At particular times and places, as during stabilization, the balance may shift temporarily to the powerful long-range fire auxiliaries, but when movement again becomes relatively free, the close-combat troops resume their basic role.

Just as the division is the key-unit of the organization of the field forces—because it is the basic element of such organization—so, *within the division, there is a key-unit of the close-combat troops* which constitute the basis of the organization of the division.

Historically, this is the unit of close-combat troops which habitually marches, fights, and lives as a self-contained element, though it may of course furnish occasional detachments. The development of a variety of close-combat weapons has added, to the previous characteristics of this unit, the quality of being the complete unit of close combat for the division of its type. It is the unit which habitually disposes, in combat, of all close-combat means. It will often require a direct call on the long-range fire auxiliaries. It constitutes the basis of the division commander's tactical thinking, just as the division, in much the same manner, constitutes the basis of the tactical calculations of the high command.

The name of this organic unit of close combat is unimportant. It may vary with the prescribed tabular organization and with fluctuations in strength. But whatever its name, it is the basis of the organization of the division. In deciding on the organization of this *organic unit of close combat*, it is best to determine details from the lower units upward. Thereafter, the organization of higher units and of auxiliaries may be determined, adjustments made, and the division thus built up.

Close-combat troops operate by *finding* the enemy, *fending* him off, *fixing* him in place, *fighting* (striking) him, and *following* him up to *finish* him. Therefore they should be provided, either organically or for ready support and attachment, with the necessary means appropriate for reconnaissance, for security—ground and air—for holding the enemy in place, for striking a blow, and for rapid pursuit.

The tests as to whether a certain agency should be included organically in any such unit, or in a higher unit where it can be made available as needed, are as follows:

Is the agency used with such frequency as to make organic inclusion desirable?

Is it available in sufficient quantities to permit organic inclusion, or should it rather be pooled under higher echelons in order to facilitate its presence when and where most needed?

Can it be employed as effectively by the lower as by a higher echelon?

Subdivision is necessary for control, and permits separation of units in the interests of maneuver. The number of subdivisions desirable is the number necessary to provide one for each function. On the other hand, experience will demonstrate a practical limit to the number of subdivisions which, under given circumstances, can be controlled by one leader. These considerations fix the number of men in the smallest unit, and the number of subdivisions in higher units.

The purpose of fixing the enemy is to hold him in such a manner as to give the desired effect to the blow struck by maneuver. The combination of fixing and maneuver therefore calls for two subdivisions, one for each function.

Three subdivisions in a unit provide one for fixing, one for maneuver, and a reserve to clinch success or cover failure.

Four subdivisions provide an organization yet more flexible, there being sufficient elements to maneuver around both flanks as well as for fixing and for the reserve. This organization is also useful in penetrations, in which case the entire unit may be used in a deep narrow column, in a square or similar figure, or in a T-shaped formation. A unit of four subdivisions is particularly flexible, as, by carrying additional overhead in the unit headquarters, the four subunits may be combined into three or two, according to the situation and the ability of the commander.

The lower units often confront local situations requiring a variety of maneuver, before higher commanders become aware of them and are able to take action. Conditions permitting, it is therefore desirable to assign to lower echelons the maximum number of subunits so that they can take effective action promptly without calling on the higher command.

However, other factors may have a contrary effect. The training level at each echelon exercises a determining influence. In a great war requiring much expansion of the peace-time



army, the training of junior leaders may be low, and casualties may keep it low. Moreover, signal communication may be relatively difficult in the lower units. In addition, fluctuations in morale may have their greatest effect here. These considerations would argue for relatively small units in the lower echelons, and for relatively few subdivisions. Each echelon should be allotted the maximum number of subdivisions, within the total desirable for its typical operations, which it is estimated that its typical leader will be able to handle efficiently, and which other factors will permit. Conditions in this respect may vary from war to war, and within wars.

The total appropriate strength of the division imposes limitations on the size of its subdivisions. Small divisions are relatively flexible, make fewer demands on leadership, and are better adapted to a theater having relatively few facilities for movement. On the other hand, small divisions may become more quickly depleted, and so put a premium on an effective replacement system.

The advantages of operating in war with units substantially of the same size as in peace should be weighed against the speed and efficiency with which small peace-time units may be expanded in war as compared to the system of creating new units in emergency. The proper use of cadres and of other measures for effective organization and training of new units may permit the attainment in practice of the more important advantages of both systems.

The intervening command echelons between division headquarters and the organic unit of close combat are mere links in control. The fewer such links, consistent with effective control of lower units, the more quickly the division commander's will can be manifested in the action of smaller units.

The various auxiliaries pertaining to the division and to larger units consist of elements designed to facilitate the task of the close-combat troops. They may include highly-mobile units, for reconnaissance, for containing the enemy, and for pursuit; protective elements, for operations against aviation, armored troops, or other threats; elements of special power, such as long-range fire auxiliaries; elements intended to facilitate the movement of friendly troops by providing transport or by improving routes, and to hamper enemy movement by the use of obstacles; elements to facilitate the exercise of com-



mand, such as signal-communication troops; and elements to effect supply, replacement, and evacuation.

Aviation may be useful in any of these roles.

Chemical agencies may be useful for containing the enemy, for protective purposes, for intensifying a blow, and for denying routes or areas.

The character and amount of such auxiliaries required by a division or higher unit will be determined by its object in the particular operation, its opposition, the theater, and the consequences of failure to allot such auxiliaries in any given amount. The character and amount of such auxiliaries made available organically, or for a particular operation, are also determined by the means of this nature actually available. If the required means are not available in amounts sufficient to justify organic decentralization thereof to divisions and larger units, it may be necessary to pool them under higher authority so as to make them available in accordance with the more important requirements of the situation. The characteristics of the auxiliaries, themselves, may also influence such assignment; in the case of units of relatively great mobility or range, organic assignment may be uneconomical.

The organization of auxiliaries will conform to that of basic elements, and be such as best to enable them to perform their respective roles.

Every unit has certain administrative, as distinguished from tactical, functions which are indispensable to its existence. Certain echelons, not necessarily all, are also assigned special responsibilities for the supply of lower units and for the replacement and evacuation of their ineffective personnel, animals, and matériel. Such echelons are called "administrative" units in the sense that they have special additional responsibilities of an administrative nature. To discharge these functions, they may be allotted additional means in transport, personnel, repair units, and the like.

But there should be no fixed rule that any given unit is always an administrative unit. Circumstances may require changes in this matter, not only from war to war, but within a campaign. For example, when means are scant and when the type of operations indicates that divisions will exceptionally be employed other than as parts of larger units, they may not be self-contained administratively. On the other hand, when means permit and when the type of operations indicates that

divisions will often be shifted from the control of one higher unit to another, or employed independently, it may be desirable to make them self-contained administratively. Limited means may force the pooling of administrative agencies under higher authority, in order to make effective use of them. The conditions of the theater may also require such action. Losses due to combat or to other causes may likewise render it necessary.

A high degree of flexibility is necessary to meet such changing conditions.

#### G.—COMMAND AREAS

A command area is an area assigned to the control of a commander.

The purpose of such assignment is to fix responsibility and to confer commensurate authority.

Command areas of higher echelons include those of lower.

Command areas of long-range fire auxiliaries necessarily include all or parts of the command areas of close-combat units. Command areas of supporting fire auxiliaries within close-combat units similarly include part or all of the command areas of the units supported.

Designation of a command area may be made by a number of methods:

By indicating a direction, or an objective, or  
an objective and a route thereto, or  
an initial location and an objective, or  
an initial location and a direction, or  
an initial location and a route.

By indicating boundaries.

By combinations of these methods.

The method used in any situation should be that best adapted to the case.

The exactitude with which it is desirable to delimit a command area is determined by the risks involved owing to uncertain authority and responsibility.

The higher commander assigning a command area should visualize the unit concerned, not as a block, but as an assemblage of so many divisions and/or organic units of close combat and subordinate units, with supporting auxiliaries. He should visualize projected operations in terms of these units.

Each critical area involved in the operations should be placed under the control of the commander of a unit of appropriate composition and size—preferably the smallest unit which

can effectively accomplish the task. The principal problem, then, is to determine the critical localities. A priority of importance is thereafter established as to these localities. Assuming competent commanders, unity of effort is provided by coordination (unity of command) in the more critical localities, cooperation being depended upon in the less critical. However, a higher commander may desire to split a locality between two or more subordinate units, and to assume immediate control over the operations there himself, in order to influence them personally.

Alternatives as to control of auxiliaries are to decentralize or to retain control under the higher command. If a subordinate commander is to receive the entire support of a given auxiliary unit, it may be desirable to attach it to his command, provided that he can control it as effectively as the higher command. If the higher command, by retaining control, can provide more effective support than if control were decentralized, centralization is preferable. If the support of the auxiliaries is to be divided among a number of lower units, the higher commander, provided that effective command is thereby practicable, may prefer to retain command of the auxiliaries. On occasion, organic auxiliaries of subordinate units may be centralized in whole or in part under the higher command. The appropriate control method can only be determined by a study of the influence, in that situation, of all the factors.

A useful method permitting increased flexibility in a situation calling for centralized control, but also calling for a degree of decentralization, is to retain control of auxiliaries under the higher command, but to make them available to support lower units on call.

In order that the authority of a commander may be commensurate to his responsibility, it is desirable that a command area include all the localities from which the enemy can influence the operations of the unit concerned. Since conflicting demands will occur, a priority may be useful in determining the assignment of various features to the command areas concerned.

In attack, for example, it may be desirable to include in each command area, subject to the priority established by the importance of the operations, the localities from which the enemy can influence operations therein, if not by all his fire, then by his fire by direct laying.

In defense, similarly, unity of effort may be furthered by including within each command area, subject to a priority established by the relative importance of the operations in terms of risk to the defender, one or more approaches available to the attacker.

The determination of the units from which reserves are taken may also influence the assignment of command areas. Unity of effort may be furthered by taking reserves, initially, from units with which they will be used eventually. This may require adjustments; such adjustments can be made either in the assignment of command areas or in the composition of combat groups to which such areas are assigned.

The appropriate assignment of command areas is facilitated by such a uniform training and morale of all elements of a unit, that the tactical integrity of its subunits is a less influential factor than the proper fitting of appropriate combat groups to the physical conditions of the theater.

\* \* \* \* \*

#### NOTE

The following extract from Part II of a suggested new edition of Field Service Regulations is included to demonstrate that a basic discussion of particular operations is practicable without inclusion of details likely to change with changes in organization and equipment. The subject of withdrawal is chosen for the purpose, because it is incompletely dealt with in existing *Field Service Regulations*.

\* \* \* \* \*

### PART II

## OPERATIONS OF WAR

### *General*

The following discussion of particular operations of war is based on the foregoing principles and the previously-discussed fundamental methods for the employment of combat power.

The discussion is intended to apply to forces of any size or character and to any theater. It is therefore presented in terms of such character as to remain applicable despite changes in organization, armament, and equipment.

The various forms of operations may be classified as offensive, defensive, and the assumption of readiness for either. Any particular operation may include combinations of any two or of all three of the foregoing.

\* \* \* \* \*

## WITHDRAWAL

*Principles.*—The principles applicable to withdrawals are the principles outlined previously, together with such subordinate principles as may be deduced therefrom.

*Definition.*—A withdrawal is a retrograde movement.

Retrograde movements are sometimes classified as withdrawals, retirements, and retreats. Under such classification a retreat is an involuntary retrograde movement, a retirement is a voluntary retrograde movement, and a withdrawal may be either.

In a yet more restrictive sense a withdrawal is the initial stage of a retrograde movement made by a deployed command in contact with the enemy.

A withdrawal may be made directly to the rear, or to the rear and flank.

*Classification.*—Withdrawals may be classified as daylight withdrawals, night withdrawals, or as combinations of the two.

A daylight withdrawal is a withdrawal made during daylight. A night withdrawal is one made during the night. Frequent combinations may occur in which the withdrawal is initiated by daylight and continued by night, or vice versa.

*Object of withdrawal.*—The object of a withdrawal may be to:

Effect a change in comparative *intensity* of combat power.

Effect a change in relative capabilities of *movement*.

Obtain *security*.

Maintain or retain *control*, or upset that of the enemy.

A withdrawal may be desirable or necessary in order to reduce the *intensity* of enemy combat power or to increase one's own either in the present theater or in another. It is not necessary that the situation be desperate to justify withdrawal; a commander may properly elect to withdraw in order to fight under more favorable circumstances, such as to get improved observation or to extricate himself from certain difficulties. Accordingly, a withdrawal may be made from one locality because factors such as terrain, distance from reinforcement or supplies, or the ability of the enemy to receive reinforcements and supplies readily, make it improbable that the desired success can be obtained there. The combat power thus made available by the withdrawal may be used more profitably elsewhere.

A withdrawal may be made to avoid some obstacle impeding *movement*, or to utilize one which will handicap the enemy.

When a withdrawal is made for purposes of *security*, the fundamental object sought is to reduce vulnerability. The flanks or rear may be open to attack. The movement may be necessary to conform to that of friendly forces. Dominating observation in the possession of the enemy may make it preferable to withdraw, renewing the fight elsewhere.

A withdrawal made in the interests of *control* may be justified by the necessity of a breathing-space in order to reorganize. It may also be justified by a resulting opportunity to catch the enemy at a disadvantage during his pursuit.

Withdrawals may therefore properly be made to: (1) escape from a desperate situation; (2) correct a very disadvantageous situation; or (3) merely effect minor improvements in one's own situation.

*Objective.*—The objective on which a withdrawal is directed is properly determined by the *object*, and by the other factors noted in the basic principle of war discussed in Part I. The objective should be such as to favor the future employment of the force, so far as is practicable.

For example, if it is desired to escape from a desperate or very dangerous situation, the primary consideration is security. If security cannot be obtained by an increase in combat power (as by reinforcement), then it must be sought by decreasing vulnerability. If maximum use is already being made of existing cover, then the only resource is to put distance or obstacles between the force and the enemy.

The objective may be distant, or even entirely indefinite, or very near. How far to go will depend on the *object*, the relative *means* of the opposing forces, the *character of the theater*, and the *consequences of failure*. The commander will not desire to give up his original object unnecessarily. How much he must relinquish will be influenced by how strong the enemy is or may become; for example, on how soon a hostile force can arrive at critical localities on the route of withdrawal. The appropriate decision will also be influenced by the extent to which factors such as terrain and weather favor hostile movement or impede his own; and also on the time required to re-establish his control.

The objective may be an assembly position or a defensive position. An assembly position may be chosen should there be

no need or desire to fight a defensive action on arrival at the objective. On occasion the objective will be an assembly position covered by a suitable defensive position, or at least an outpost. Such assembly areas or defensive positions should preferably have the characteristics desirable for such purpose, with due regard to the character of the action to be taken after arrival there.

The presence or absence of natural obstacles may be an important factor in the choice of the objective.

It may be very desirable to utilize artificial obstacles and delaying forces to impede enemy movement toward the selected objective.

The situation may arise where the initial withdrawal is made for a relatively short distance to some locality or line where reorganization may be effected and new reserves be made available; after which the withdrawal may continue, under better control, to a more distant objective.

Unless the arrival of reinforcements or some other factor renders it desirable or necessary to hold nearer to the original position, it may often be appropriate to withdraw to a distance such as will force the enemy to lose time in the displacement of his relatively-immobile elements, such as his powerful long-range auxiliaries, before he can renew the action effectively.

The objective may, however, be relatively close to the original position, and may even involve only a minor rectification of the existing disposition of the force. This may occur when it is undesirable and unnecessary to uncover some important feature close in rear.

The withdrawal may be purely temporary, and incidental to a further advance. In this case it may not be desirable to withdraw behind an obstacle or to execute much destruction of routes while withdrawing, because such obstacles might impede the contemplated forward movement thereafter.

*Time of withdrawal.*—A withdrawal is preferably made when the enemy is least able to influence it effectively. Secrecy may be important. Enemy aviation and ground reconnaissance forces may be influential considerations. The cover of darkness may afford great advantages. However, these are to be weighed against any disadvantages which darkness may impose on our own protective weapons. Withdrawals may also be made under cover of fog or rain, or may be covered by smoke. Weak hostile pressure may permit withdrawal in good order during daylight,



and yet it may be preferable to await darkness in order to reduce losses.

In a withdrawal initiated during good visibility, secrecy may be lost, and the enemy may gain advantages in interfering with the withdrawal by such measures as interdiction of routes by fire, aerial attack on marching elements, and an early pursuit.

On the other hand, hostile pressure may necessitate such withdrawal, to avoid destruction or heavy loss. Again, a threat against flank or rear may necessitate such withdrawal, notwithstanding the disadvantages.

In this, as in all other decisions, no rule-of-thumb can be given. It is necessary to weigh all advantages and disadvantages with a view to adopting the course having least of the latter and most of the former.

*Order of withdrawal of elements.*—The simultaneous withdrawal of all elements in contact may be the most expeditious and safe method of extricating the command. However, the following factors may exercise a determining contrary influence:

The *objectives* of the various elements after withdrawal, which may make it desirable to proportion the physical exertions involved according to the capabilities of the troops, thus calling for the withdrawal of some units prior to others.

The *hostile pressure*, often the paramount factor. If the situation of other elements permits, a hard-pressed portion of the force may be withdrawn first. But it may be the case that such action would involve other elements not now in grave danger, and work havoc with the whole force. Therefore it may even be necessary to withdraw hard-pressed units last. It may be better to lose a part than to jeopardize the whole.

*Movement* so as to avoid conflicts and obtain rapid and smooth execution may make it desirable to withdraw certain units ahead of others.

*Security* may in some cases lead to withdrawing first the elements more exposed to hostile threat. In other cases, it is these very elements which must remain in place, perhaps even to the last, in order to protect the force as a whole. Service elements may be moved out first to clear the routes for combat troops and to insure their

safety. On the other hand, serious threats to flank and rear may require some combat elements to lead the way to the rear; or it may even be necessary to execute the movement with an all-around defense. Main bodies having begun their movement, covering forces assist them and withdraw either simultaneously with them or thereafter.

*Control* requires that headquarters displace to the rear in such a manner as to retain effective command. In a retrograde movement, as for all movements, security factors may call for no special additional control measures; but, on the other hand, they may require a highly-centralized and rigidly-regulated method of effecting the maneuver. Movement by bounds to the rear may frequently occur when the withdrawal is effected under strong pressure.

Any rule-of-thumb such as always or generally withdrawing first the units most hard-pressed, or those least-pressed, will necessarily fail in certain cases. The entire situation must be reviewed in the light of all the factors.

*Routes and command areas.*—The direction of withdrawal for the command as a whole should be appropriate to the location of the objective, the routes of movement thereto, the hostile pressure, any additional enemy threat, and to facility of control. Initially it may often be desirable that the command be directed well away from the localities of the more serious hostile threats.

The initial direction of withdrawal of subordinate elements engaged with the enemy may preferably be directly away from the enemy until sufficiently disengaged. They may thereafter move by the most appropriate routes either to their new defensive positions or to assembly areas or initial points preparatory to forming march columns.

Movement is regulated primarily by apportioning routes to the various subdivisions. This may be done by allotting routes, specifically, or by assigning command areas.

Routes may often be indicated for trains and for other units displacing to the rear under direct control of the higher command; such elements may include auxiliaries and reserves.

The assignment of command areas will often be the best method for regulating the movement of close-combat subdivisions. This may be especially the case if they have to fight

while falling back, since the assignment of a command area gives the commander a definite authority over, and responsibility for, that area.

Routes or areas should be indicated preferably as far back as will be needed for the next phase of the action: for example, to the defensive position at which the withdrawal is to terminate; it may be desirable to indicate clearly the route of each element back to the locality where next employed. If the objective is very distant or indefinite, routes may be indicated back as far, for example, as a day's march.

The number of routes assigned any element, whether specifically or included in a command area, will depend on the number available, the influence which the enemy can exert over such routes, the size and speed of the subdivisions to use the routes, and the urgency of the situation.

An indication will often be given to each main subdivision as to its mission on arrival at the new location.

*Reconnaissance.*—Reconnaissance will be focussed on those hostile elements which can interfere with the withdrawal, the degree of attention given each depending on the degree to which it can exercise such influence. The appropriate detailed reconnaissance instructions suited to its means of action will also be issued to each reconnaissance agency. Reconnaissance will also be instituted of new objectives and of routes thereto.

*Covering forces.*—Covering forces are protective forces. They may act from in front, from a flank, or in rear. General covering forces protect the main body or important fractions. Local covering forces protect less important subdivisions. A covering force may be utilized only for the initial stage of the operation, for a later stage, or for both.

Covering forces may include the following:

Detachments left in position to hold the old front for a time, then withdraw.

A specially-constituted rear guard to take over from the initial detachments noted above, and to cover the movement thereafter. If the withdrawal is for a relatively short distance, a rear guard of this nature may be unnecessary.

A designated outpost, sometimes identical with the rear guard, to cover the new defensive position or assembly area.

Specially-constituted flank covering forces, to cover the flank, or, if necessary, the original rear. These may eventually become rear guards or flank guards.

New advance guards, to lead the way during the withdrawal. These may be necessary, when in hostile country; when it is necessary to fight the way out through the enemy; or when the enemy may interpose by the use of highly-mobile troops.

In periods of good visibility a local shell of covering detachments may be over-run by a strong and aggressive enemy. On the other hand, when visibility is low, or when the enemy must pass a serious obstacle, or when he is weak or not aggressive, comparatively small forces may hold him for a relatively long time. Therefore, even under conditions of good visibility, such a local shell may be utilized. At times it may be placed in position on some line in rear, which line the enemy cannot over-run prior to dark; here it may hold the enemy during the night or withdraw as ordered, rejoining the command either by movement of small groups, direct, or via designated assembly areas whence movement may be resumed in larger bodies.

In the initial stage of withdrawal during good visibility and opposed to a strong aggressive enemy, subordinate elements may move to the rear employing the tactics of delaying action without leaving detachments in position.

A separate rear guard may be designated in the initial order, but this will be less likely if the movement is initiated during good visibility and when opposed by a strong and aggressive enemy, because the entire force will under such circumstances probably be required to fight the initial rear-guard action. Later on, in such cases, a separate rear guard may be constituted.

The presence of a rear guard formed initially may be caused even in daylight, as when a force, not under strong hostile pressure, must withdraw in order to meet a threat elsewhere or to comply with orders contemplating its employment elsewhere. Such a rear guard may hold in or near present positions, cover the withdrawal, and contain the enemy as the withdrawal proceeds.

A covering force may be employed by defending a position, or by counterattacking the enemy, or by both methods. It may also have a reconnaissance mission.

A position to be defended by a covering force should preferably have the characteristics of any desirable defensive or delaying position; be located so that it may be reached in time; provide covered routes into it and away from it; enable the covering force to meet or deflect the hostile threat; avoid involving the covering force in the retrograde movement of friendly forces, or causing its fire to be masked by their movements; and be helpful in assisting the withdrawal of original front-line troops, and of local reserves on its flanks.

The time of the withdrawal of the covering force may be left to the discretion of its commander, or designated by the higher commander.

Troops composing covering forces are preferably of types appropriate to their object, to the enemy forces with which they must deal, to the locality in which they are to act, and to the risks involved should they fail in their mission. Troops of mobile type, strong in defensive weapons, are desirable. The amount of power allotted for this purpose depends on the enemy attitude and strength. A stubborn close-in defense would require a covering force strong in close-combat defensive elements. An excess of power, however, may cause the force to become unnecessarily involved. If it can accomplish its mission without being heavily engaged, highly-mobile delaying forces may be adequate. In either case, armored elements, especially of fast types, may be very useful.

Highly-mobile elements made available for such covering duty may be employed directly under the higher command, or attached to covering forces of less mobility. The commander who can best control their action for the desired purpose should be given this responsibility and commensurate authority.

*Long-range auxiliaries.*—The long-range fire auxiliaries employed against the hostile ground forces apportion their fire according to the relative importance of the hostile threats. When withdrawal occurs during good visibility and from contact with a strong and aggressive enemy, the mass of such auxiliaries may be employed to support the front-line troops in breaking off the action. On occasion a portion—the mass, if so required—may be used to meet threats against the flank or rear. In an intense action, portions, preferably of minimum size, may have to be detached for duty with forward elements left to hold the enemy. In some cases such elements must be

sacrificed. In order to maintain continuity of support, withdrawal may be by echelon.

In withdrawals during low visibility, relatively little fire support may be necessary. Early movement of auxiliaries to the rear may then be initiated. Minimum detachments may be left to support forward elements; such detachments endeavor by rate and character of fire to conceal the fact of withdrawal.

The attachment of long-range fire auxiliaries to the general covering force may frequently be desirable to assist it in performing its mission and in its subsequent withdrawal.

Antiaircraft-fire auxiliaries protect the command against observation and attack. Critical elements include formed bodies of troops such as service elements; also the general covering forces and other troops intrusted with important missions, or especially vulnerable to attack. Special attention may be required to defiles en route. Once the withdrawal is well under way the heads of columns may require special protection so as to avoid delay due to aerial attack. At night, care is indicated to avoid disclosing the fact of withdrawal by making early material changes in locations of antiaircraft elements when their activities may be noted by the enemy; this consideration must be balanced against the necessity for providing protection to certain important and vulnerable elements.

*Aviation.*—Aviation performs its routine missions, and carries out special reconnaissance. It may assist materially as a communication agency, carrying orders and information from and to outlying detachments.

Appropriate air units are also employed to limit hostile aerial reconnaissance and to secure against aerial attack.

Aviation may also lay smoke to cover the withdrawal.

Air units may be utilized to attack enemy forces endangering the withdrawal.

*Engineers.*—Engineers assist the movement of friendly troops and impede that of the enemy. Their duties may include reconnoitering and marking routes, and furnishing guides; reconnoitering, staking out, and organizing rear positions; obstructing the hostile advance by demolitions and other obstacles; destroying stores to be abandoned; fighting, as part of a covering force, as a reserve, as a train-guard, or as a special security detachment (for example, on a flank). The appropriate priority of such tasks and the selection of those to be performed in any situation are command decisions.

*Chemical agencies.*—Chemical agencies may be utilized to reduce hostile pressure and to afford concealment. Appropriate agents may be used to deny areas to the enemy, to delay his movement, and to cover friendly troops. The use of smoke in conjunction with offensive action, especially by fast armored elements, may be very effective.

*Highly-mobile elements.*—Ground troops of high mobility are useful not only for reconnaissance but also to assist in breaking off contact by attacking the hostile flank and rear. They may also block encircling pursuit. After contact has been broken off, they may utilize their mobility to delay the enemy without becoming seriously engaged. They may be attached to, or assist, the covering forces, or operate independently thereof.

*Armored elements.*—Armored elements may be utilized to protect against hostile armored elements, or to assist in breaking off the action by attacking the enemy, preferably in flank and rear, or to delay pursuit. Employment in conjunction with smoke may be very effective.

Fast types are particularly useful.

*Special security measures.*—In addition to routine security measures and to the special security measures outlined above for the general security of the entire force, other special security measures may be necessary or desirable to provide for secrecy and to deal with aerial attack and with hostile armored forces.

When withdrawing in low visibility it may be desirable to forbid the use of lights in the open, and to take special precautions against making unusual noise.

When initiating withdrawal in daylight, it may be necessary or desirable to restrict rigidly the movements to be made prior to dark, excepting only the minimum indispensable activities.

Special instructions may be issued as to precautions against aerial attack.

Special measures may be needed to provide for the security of the command, especially of its train elements, against attack by highly-mobile hostile forces, including armored troops.

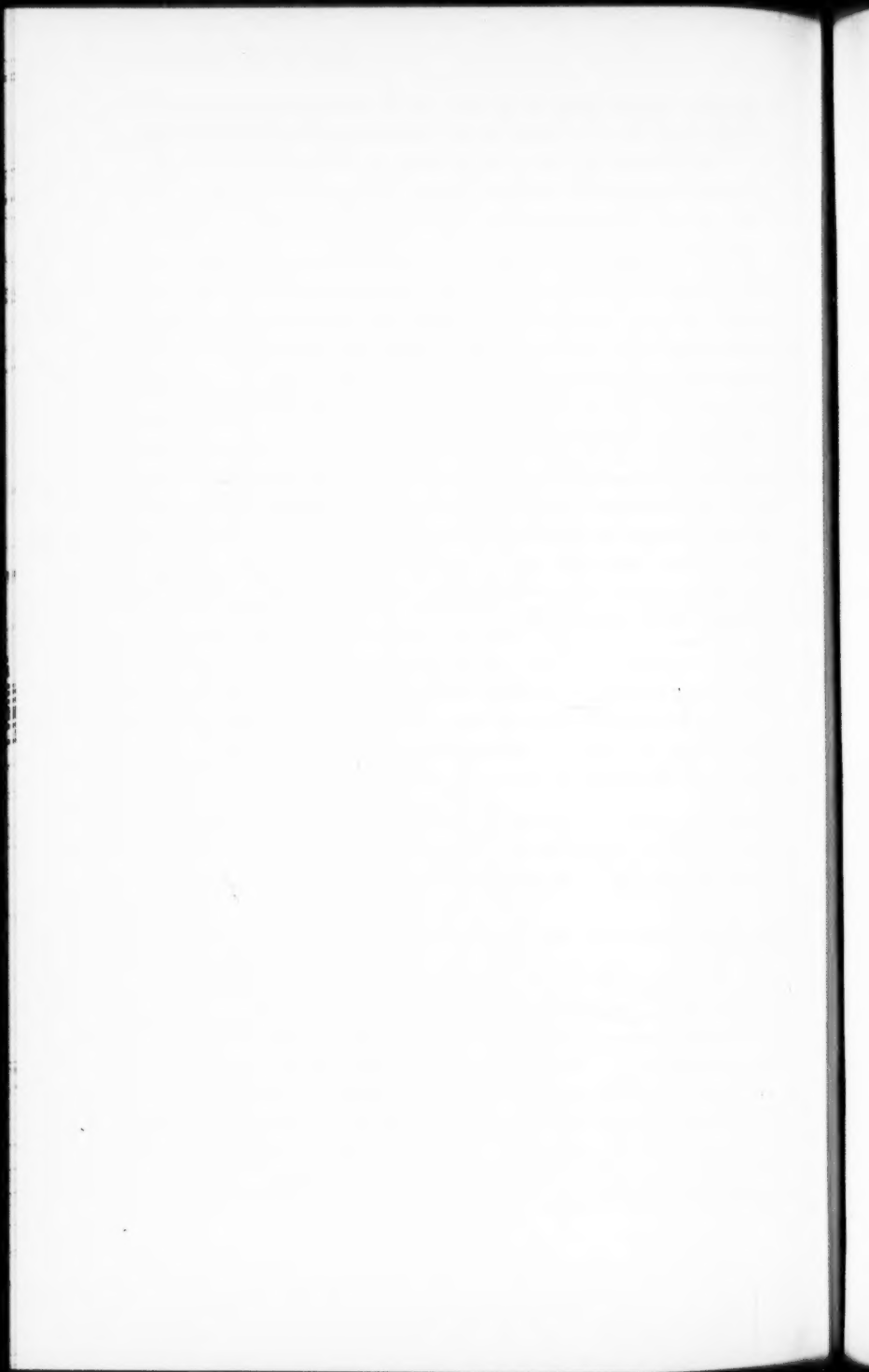
*Special control measures.*—In addition to indicating the time of initiating withdrawal, the allotment of routes or assignment of command areas, and the designation of objectives in rear, certain special control measures may be needed. They may include merely an indication of priorities on certain routes; or, very detailed regulatory prescriptions may be necessary.



Special reports may be called for: for example, as to time of initiating and completing the withdrawal at designated localities.

In regard to measures to interfere with hostile control, it may be practicable to deceive or at least confuse the enemy by the use of offensive action in critical localities, thus diverting attention from preparations for withdrawal or from the act of withdrawal itself. Covering forces left in position after dark may conceal relative weakness or simulate strength by a show of great activity, as by the employment of combat patrols, the liberal use of flares, and a relatively greater use of their various weapons.

*Signal communication.*—Necessary measures must be taken to insure the functioning of the command system. Where applicable, displacement of command posts to the rear along the appropriate axes of signal communication is so regulated as to insure liaison between the various echelons of command. Command-post sites are selected in accordance with the type of action expected, with due regard for security. Hours of opening and closing command posts are announced when such information is useful and when the hours can be foreseen.



## Section 2

### ABSTRACTS OF FOREIGN-LANGUAGE ARTICLES

This section contains abstracts of important articles from foreign military periodicals; the remaining articles for each magazine are listed in Section 4.

#### CONTENTS

	Page
The Russo-Polish War, 1919-1920. Part IV.....	51
Divergent Principles for Meeting Engagements Based on German and French Regulations.....	61
Maneuver and Fire Direction of the 75-mm. Battalion of Division Artillery.....	64
The Landing at Anzac.....	81
Employment of Motorized Machine Gun Battalions.....	90

#### THE RUSSO-POLISH WAR, 1919-1920

##### Noncritical and Critical Views\*

###### (PART IV)

By Major F. During, Infantry

#### IV.—THE BATTLE OF THE VISTULA (6-25 AUGUST)

##### *The Russian Plan*

The decision to annihilate the Polish North Front with the mass of the Russian forces and to continuously harass the Poles in order to prevent them from offering any definite resistance, made it possible for the Russians to advance within a month from the Berezina and Düna rivers to the Bug River, a distance of from 250 to about 300 miles. It can be readily understood that the commander of the Russian North Front, Tuchatschewskij, intended to bring about a final decision based on his original plan, especially as he did not consider himself strong enough to take Warschau (Warsaw) which was secured by a Polish bridgehead. The existing grouping of the Russian forces, as well as the fact that an advance on both sides of the Weichsel (Vistula) in a southerly direction would cost the Poles

Abstracted from *Militärwissenschaftliche Mitteilungen*, February 1936. "Der russisch-polnische Krieg 1919-1920. Unkritische und kritische Betrachtungen," by Colonel Alfred von Wittich.

\*See RML No. 52, page 43; RML No. 55, page 43; and RML No. 58, page 39, for previous installments of this series.

the capitol and cut off their communications with Danzig, made it advantageous to have the main effort be made on the north.

In view of this, Tuchatschewskij on 8 August ordered a general attack for 14 August.

The III Cavalry Corps was to cross the Weichsel (Vistula) at Wloclawek, then turn north and cut off communications with Danzig. The Fourth Army with its mass was to cross the Weichsel (Vistula) at Plock. The Fifteenth Army was first to advance to the area: Wyszogrod—Modlin, and in conjunction with the Third Army envelop the Poles near Warschau (Warsaw). The Sixteenth Army was to attack frontally the Poles between Radzymin—Gora Kalwaria; the Group Mozyr was to advance via Deblin. Tuchatschewskij also intended to use the Twelfth Army and Budennij's cavalry, but this failed to materialize. The commander-in-chief of both Russian fronts did not approve of this plan; he wanted the Third and Sixteenth Armies to attack frontally near Warschau (Warsaw), placing the main effort on the south instead of on the north.

On 10 August he sent a telegram to Tuchatschewskij to the effect that if he (Tuchatschewskij) believed that the mass of the Polish forces were north of the Bug, the attack should take place as soon as possible and as planned by Tuchatschewskij. This plan was faulty in that all Russian forces were used without reserves being kept in rear, and that the III Cavalry Corps was used for a mission which could easily have been given to patrols.

### *The Polish Plan*

The commander-in-chief of the Polish forces, Pilsudski, the French General Weygand, the Chief of Staff Rozwadowski, and the Polish Minister of War Sosnkowski, prepared the Polish plan. Of course there were differences of opinion, but eventually an agreement was reached.

The plan for which Pilsudski took full responsibility, was (1) that the Polish forces on the north should withdraw to the line: Orshyz—Narew—bridgehead at Warschau (Warsaw)—along the Weichsel (Vistula) to Deblin for a regrouping of these forces. This line was to be held until the effect of a flank attack became known, at which time the troops on this line were to participate in the attack in order to drive the Russians to East Prussia.

(2) An attack group was to be organized on the Wieprz River, in order to attack the Russians east of Warschau (Warsaw) in flank and rear.

(3) The South Front was to contain the Russians on that front.

Pilsudski did not intend to weaken the South Front, nor could he take any troops from the North Front; consequently, for the organization of the new attack group only three and later five divisions and one cavalry brigade were available.

This plan was issued in the form of an order on 6 August to all armies. According to this order, the Polish front was divided into the (a) North Front, (b) the Center, and (c) the South Front.

The North Front was commanded by General Haller, with the Fifth Army under General Sikorski on the north flank; the First Army under General Latinik at Warschau (Warsaw), and the Second Army under General Raszewski, south thereof to Deblin.

The Center Front was under the direct leadership of Pilsudski; it consisted of the Fourth Army, General Skierski commanding. This army, consisting of three divisions, was to attack from the line: Deblin—Kock on 17 August. Two Legionnaire divisions and one cavalry brigade from the Third Army were assigned to this group before 17 August. The Third Army was to protect the flank of the Fourth Army by an attack in an easterly and southeasterly direction.

The South Front extended from Brody to the Rumanian boundary and consisted of the Sixth Army under General Iwaszkiewicz, and the Ukrainians under General Pawlenko.

In spite of Russian interference on the north, the organization of the attack group was completed, but the day of the attack was advanced from 17 August to 16 August.

#### *Polish and Russian Forces*

Sketch 16 gives the strength on both sides as of 16 August 1920.\* Accordingly the Polish were numerically superior during the battle of the Weichsel (Vistula), which might have been disadvantageous to the Poles, had the Russian Twelfth Army and Budennij's cavalry executed a timely attack in the direction of Lublin.

(\*Errata: On Sketch No. 16, under "Strength in the Vistula Sector as of 16 August according to Sikorski"—the words *Salvos* should read *Sabers*.)

According to Pilsudski, the Russians were numerically superior opposite the Polish Fifth Army, 2 to 1, and according to Sikorski this ratio was even 3 to 1.

At the bridgehead at Warschau (Warsaw) the Polish First Army was not only numerically superior to the Russian Sixteenth Army, but the Poles also had heavy artillery and aviation here. According to Sikorski, the Polish Fourth Army was five times as strong as its opposing Russian Group Mozyr.

*The Situation from 6 to 13 August*

In view of the advance of strong Russian forces north of the Narew, Pilsudski decided to reinforce the Fifth Army with one division, one brigade, and one cavalry brigade. During this time the Russians attacked Pultusk, and when on 11 August this important crossing over the Narew fell, it became impossible for the Poles to hold the Orshyz—Narew line. Based on the recommendation of General Weygand, Sikorski decided to withdraw to the Wkra River, placing his mass in the Modlin area and his cavalry on the north. Fighting rear guard actions, this line was occupied by 13 August. During the afternoon of 13 August, a Russian division advanced from Sachocin on Plonsk, but the Polish 8th Cavalry Brigade drove this division back across the river. General Sikorski decided on 13 August to counterattack the Russian Fifteenth Army in order to drive it east of the Narew and Orshyz. Following this, he intended to attack the Russian Fourth Army in a northerly direction.

The commander of the North Front not only approved, but urged this, as his headquarters had intercepted a Russian radio message which ordered the Russian Sixteenth Army to advance to the line: Jablonna—Okuniew—Kolbiel on 14 August.

The situation at the bridgehead near Warschau (Warsaw) was somewhat simpler for the Poles. The strength of the bridgehead lay in the organization of the artillery which was under French command, while its weakness lay in the fact that the Polish troops there were considered second rate. Three divisions and one brigade were in the front line while two divisions were in reserve. The Russian Sixteenth Army, having lost contact with the Poles, regained this contact on 13 August. The three Polish divisions which were to form the Fourth Army, broke contact with the Russians and, in order to deceive them, marched to the west, then turned south and by forced marches advanced to their concentration area at the lower Wieprz

River. The success of this move was largely due to exhaustion of the Russians and their shortage of aviation and finally to their lack of cavalry with the Group Mozyr. The Russian 57th Division of this group reached Kock, but was unable to cross the Wieprz, while the Russian 58th Division was held up at Wlodawa.

The Polish 1st and 3d Legionnaire Divisions, which had been ordered to join the Fourth Army, were forced to attack the Russians. After this successful attack, the 1st Legionnaire Division marched to Sokal and entrained there for Lublin. The 2d Legionnaire Division marched overland. Opposing the Russian Twelfth Army were now two Polish divisions and a group of the Third Army.

It is of interest to note that both sides were very careless in the distribution of orders and plans. The Poles were able to intercept radio messages of the Russians, while the Russians obtained a Polish order, to which, however, they paid no attention.

*The Situation of 14 and 15 August*

On the North Front both sides attacked on 14 August, without success. The Russians continued their attack at dawn, 15 August, along the entire line. At the same time the Polish Fifth Army, which had placed all its reserves in line during the night, decided to make a main effort with three divisions from two directions against the Nasielsk area, in which the Russian main forces were concentrated. A frontal attack was to be made from the Wkra line and another attack from Modlin. This double attack was successful and raised the morale of the troops. A group on the north under General Krajowski was able to reach the railroad line: Nasielsk—Ciechanow, while its cavalry was successful in taking Ciechanow.

On 15 August the Russian General Tuchatschewskij, who had his headquarters more than 250 miles in rear, heard of the attack of the Polish Fifth Army and he believed that the opportune moment for a decision had arrived. He thought that by a turning movement of the Russian Fourth Army against the flank and rear of the Polish north flank, he would be able to encircle the Poles at the Wkra. Accordingly, on 16 August an order for this move was issued, but was never received at army headquarters, and radio communication between Tuchatschewskij and Fourth Army headquarters was not reestablished. On the other hand, the Poles intercepted this order which caused



some consternation at Sikorski's headquarters. It was decided, however, to continue the attack of the Fifth Army. Since the Russian Fourth Army did not receive the order, this decision of Sikorski was indeed fortunate. A Polish armored car reconnaissance detachment reported that no movements or preparation for an attack was noticed by the Russian Fourth Army.

The Polish First Army, which occupied the bridgehead at Warschau (Warsaw), was attacked during the night, 13-14 August. The Russian main effort was against the Polish 11th Division which occupied the sector: Zegrze—Radzymin. Two Russian divisions took Radzymin. Pilsudski was asked to start the attack of the Polish Fourth Army without delay, which he refused, but he advanced the day of the attack from 17 August to 16 August. In the meantime the Polish First Army counterattacked with two divisions, which was partly successful by 14 August. General Haller ordered the continuation of this counterattack on 15 August, using his last reserve. This attack in which 47 tanks were used, drove the Russians from Radzymin, but later in the day they were again able to occupy part of that town.

The Polish Fourth Army, which was concentrated at the lower Wieprz, was short on material; the rifles were of French, Austrian, and German manufacture; one-half of the 21st Division was barefoot.

Pilsudski was very much concerned with the possible action of the Russian Twelfth Army and Budennij's cavalry, whose position was favorable for an attack against the Polish flank and rear. But the Russian general headquarters decided to move its Twelfth Army to the north and also ordered Budennij to advance in a northerly direction toward Lublin. The Twelfth Army, however, was contained in the south by weak Polish forces, while Budennij did not comply with the order because it was not countersigned by a political commissar.

Only half of the available Russian forces participated in the battles near Warschau (Warsaw). The Fourth Army, with the III Cavalry Corps, the Twelfth Army and Budennij's cavalry, remained partly inactive and partly advanced in an indecisive direction.

*The Decisive Days of 16-18 August 1920*

At 4:00 AM, 16 August, the Polish Fourth Army crossed the Wieprz. The Russian 57th Division was completely sur-

prised and practically annihilated; the Russian 58th Division was driven back over the Bug River by the Polish 3d Legionnaire Division. All five Polish divisions reached their objectives that day. (See Sketch 18.)

The Russian Group Mozyr had ceased to exist, and the flank and rear of the Russian Sixteenth Army were unprotected. Tuchatschewskij did not hear of this catastrophe until the next morning, and the headquarters of the Russian XVI Corps, which had lost all communications with its own division, was not informed of the threatening envelopment from the south until sometime during 17 August.

In the Warschau (Warsaw) area, the Poles were successful and took Radzymin. The Russians executed a weak attack along the line: Okuniew—Karczew. The Polish 7th Reserve Brigade was assigned to the Fifth Army.

In the north the mass of the Polish Fifth Army began an envelopment of the Russians from the south at 7:00 AM, in order to take Nasielsk, which was captured by 4:00 PM. At the Polish north flank the situation was critical. Two Russian divisions attacked the Polish 18th Division and 8th Cavalry Brigade from the north, while two additional Russian divisions advanced from the northwest on Plonsk.

The Polish Second Army, not having any Russian troops opposing them (Karczew—Deblin sector) was made inactive; the 4th Division was sent to the Fifth Army and transported by motor to Plonsk, while the 2d Legionnaire Division was assigned to the Fourth Army. This army continued its advance on 17 August to the north. It met the south flank of the Russian Sixteenth Army, which was in the act of withdrawing to the east. After successfully attacking this Russian force, the Polish Fourth Army reached its objective. It had advanced about 50 miles in two days.

The 15th Division of the Polish First Army, accompanied by tanks, advanced at 8:00 AM in the direction of Siedlec. At 6:00 PM, it contacted the Polish 14th Division at Minsk-Mazowiecki, without having met any enemy opposition. The 8th, 10th, and 19th Divisions remained inactive on 17 August, while the 11th Division was assigned to the Fifth Army.

On the Russian side the 8th and 9th Divisions of the Sixteenth Army were practically enveloped by the Poles; the north flank of this army, on the other hand, started to withdraw to the east bank of the Liwiec River north of Sokolow.

The Polish Fifth Army, consisting now of 6 divisions and 2 cavalry brigades, fought on two fronts. Three and one-half divisions attacked in an easterly direction and were successful in taking the crossing over the Narew at Seroek and Pultusk. The Russian Third Army began to withdraw toward Ostrow during the night. On the other hand, the Russian Fourth Army attacked the Polish group Krajowski and the Siberian brigade, who, even though being hard-pressed, stood their ground. The Russian 18th and 54th Divisions attacked at Plonsk, but a counterattack by the Polish 18th Division took 700 prisoners and many vehicles. Two Russian divisions (12th and 53d) and the III Cavalry Corps did not participate in this fight. At 6:30 PM, Tuchatschewskij issued orders for the Russian Fourth Army and the III Cavalry Corps to start an immediate withdrawal to the line: Przasnysz—Ciechanow—Makow and to be prepared by 20 August for an attack against the flank and rear of the Polish Fifth Army. The Russian Fifteenth Army was to continue its attack in order to protect the withdrawal of the Fourth Army.

The Russian Third Army was to defend the Narew line; this line to extend to the confluence of the Bug and Liwiec rivers. The Russian Sixteenth Army was to concentrate in rear of the Liwiec River and the Group Mozyr in the Biala area.

A reserve of two divisions was to assemble in the area: Drohiczyn—Janow. The Russian Twelfth Army was to attack with all available means in the Cholm—Lubartow area, and Budennij's cavalry in the direction: Zamosc—Lublin.

This order was not based on existing conditions, however. The Group Mozyr had been wiped out, and the rapid and successful advance of the Poles had not been considered. Furthermore, the Fourth Army did not receive the order, and the Twelfth Army and Budennij ignored it entirely.

Heavy fighting took place on 18 August south of Ciechanow, where the Russian Fifteenth Army tried hard to protect the withdrawal of the Russian Fourth Army. The Russian Third and Sixteenth Armies continued their withdrawal. The right flank of the Polish Fourth Army advanced rapidly, while the left flank cleared the area near Warschau (Warsaw) of isolated Russian troops.

Pilsudski arrived in Warschau (Warsaw) and issued orders for a pursuit. The Polish Third Army, reinforced by the 2d

Legionnaire Division and Kubankasaken's Brigade, was to cover the Bug line.

The 1st and 3d Legionnaire Divisions, the 21st Infantry Division, 4th Cavalry Brigade of the Fourth Army, and the 19th Division of the First Army, were formed into a new Second Army with orders to pursue to Bialystok, and also to take Brest-Litowsk.

The Fourth Army was to cross the Bug River between Granno and Brok and advance on the line: Grajewo—Kolno in order to drive the Russians against the East Prussian boundary.

The First Army was to pursue in the direction of Wyszkow—Ostrow—Lomza.

The Fifth Army was to advance in the direction of Przasnysz—Mlawa in order to cut off the withdrawal of parts of the Russian Fifteenth and Fourth Armies and the III Cavalry Corps to the east.

In view of the situation at the North Front, General Haller changed the regrouping and took from the Polish Fifth Army the Siberian Brigade, the 7th Reserve Brigade, and the 17th Division, organized those into the First Army under the command of General Osinski, and ordered it to advance north via Przasnysz in conjunction with the Fifth Army, which was to advance on Ciechanow—Mlawa.

With the exception of parts of the Polish Second Army, all Polish forces advanced to the north on 19 August. Fighting took place in the area near Ciechanow, where the Russians put up strong resistance. By nightfall the line: Ciechanow—Makow was reached and the right flank had taken Brest-Litowsk.

The situation on 20 August is shown on Sketch 19.

The Polish 18th Division took Mlawa on 21 August, and on 22 August the line: Sniadowo to south of Bialystok was reached. The Russian Fourth Army and the III Cavalry Corps were now cut off from the remainder of the Russian forces.

Bialystok was taken on 23 August, and on 24 August the advanced elements of the Polish Fourth Army reached the East Prussian boundary. The pursuit came to an end on 25 August on the line: Mlawa—Grajewo. The Polish troops needed a well-deserved rest, and it was not until 19 September when the last phase of the Russo-Polish War began.

On the Russian side, the entire North Front, with the exception of the Fifteenth Army, began the withdrawal on

19 August. This army started its withdrawal during the evening, 19 August, leaving one division north of Ciechanow to assist the Russian Fourth Army.

The commander of the Russian III Cavalry Corps tried to break through the Polish lines to permit the Russian Fourth Army to join the remainder of the Russian forces. He was successful in breaking through the Polish Fifth and First Armies. Upon reaching Kolno, however, the Polish Fourth Army forced this corps to enter East Prussia, where they were interned, as were four divisions of the Russian Fourth Army, and two divisions of the Fifteenth Army. The rest of the Russian forces halted on the line: Grodno—Wolkowysk—east of Brest-Litowsk—Bug River.

During the next few weeks the Russians reorganized their forces on this line. What was left of the Russian armies is shown in the following table:

Fourth Army.....	Interned
III Cavalry Corps.....	Interned
Fifteenth Army.....	700 rifles
Third Army.....	2,000 rifles
Sixteenth Army.....	1,000 rifles
Group Mozyr.....	None
<hr/>	
3,700 rifles	

The Poles captured 65,000 prisoners, 231 guns, 1,023 machine guns, over 200 field kitchens, several thousand horses, 10,000 animal-drawn vehicles with ammunition, and a large number of trucks, automobiles, and armored cars.

The battle of the Weichsel (Vistula) can readily be classified as a battle of annihilation.

#### COMMENTS

During the first days in August, the Russians had reached the Bug River and based on the recent successes, Russian general headquarters could reasonably expect a successful termination of the war. By a massing of the Russian forces at the proper place, it would have been possible to encircle the Poles in the Warschau (Warsaw) area. But due to faulty leadership on the Russian side, and the weak resistance offered by the Russian forces, the Poles turned the tide. Besides failing to mass their forces for a final decisive blow, the wilful dis-







obedience of orders by higher commanders, the interference of politicians in military decisions, and faulty communications system, had much to do with the Russian failure.

The change from the defensive to the offensive at a time when the Russians were nearly exhausted, proved successful for the Poles. Furthermore, the pursuit of the Poles was correctly timed and executed and brought about the near destruction of the Russians. (To be concluded)

---

### DIVERGENT PRINCIPLES FOR MEETING ENGAGEMENTS BASED ON GERMAN AND FRENCH REGULATIONS.

By Major G.J. Braun, Infantry

Prior to the World War considerable time was devoted to the instruction of the meeting engagement. This instruction instilled in leaders determined resolution, mobility, and maneuverability in the handling of troops.

According to the German field service regulations, a meeting engagement is a combat resulting from the collision of marching opponents and is developed without time-consuming preparations. The French regulations do not recognize this as a meeting engagement but state it is a feeler (*prise de contact*) carried on by advanced elements (*engagement des forces de première ligne*). The French do differentiate between an enemy in position and one that is still mobile and also possessing attack intentions. The latter is the closest to the German conception of a meeting engagement, but even here the French do not deal with the sudden encounter of opponents.

The larger French forces do not consider a sudden encounter possible due to their advance activities. When the danger of contact comes, the French change from the advance to the approach march (*marche d'approche*). Here they leave the main roads and the troops are disposed greatly in depth and breadth, and move forward under artillery observation, in sectors. Strong advance guards (*forces de première ligne*) precede the main body, and the corps and division cavalry are in front of the advance guard. This type of advance is to prevent hostile surprise and allow the commander maneuver freedom and the

---

Abstracted from *Militär-Wochenblatt*, 25 March 1936. "Unterschiedliche Grundsätze für das Begegnungsgefecht nach deutschen und französischen Vorschriften."

possibility of utilizing the mass of his troops according to a preconceived plan and also to select and occupy favorable terrain.

The German regulations ascribe the uncertainty of the situation as the main characteristic of the meeting engagement. It demands of the leader a rapid estimate and decision when confronted by an unknown situation. By determined and energetic action the initiative must be kept. In case the opponent assumes the defensive immediately after first contact, the regulations advocate a strong offensive action to force the enemy back.

The French differ in this respect. They wish to avoid all dealings in uncertainties. They desire to wait and get more information and then have a more definite objective. They advocate that the situation must first be clarified and then employ the main body to gain a victory.

The divergent objectives disclose the combat methods. The Germans desire to force a quick decision and for this purpose the troops are moved up into the line of combat by the shortest routes. The French advance guard (*forces de première ligne*) have the mission to locate, delay, pin down, or contain the hostile force. The missions are solved by attacks as long as the enemy is numerically inferior, or as long as the clarification of the situation requires it or when future plans require the capture of essential terrain. As soon as the enemy becomes numerically superior, the French advance guard takes up the defense and covers the approach march of the main body.

The German designation of objectives in a meeting engagement also calls for the employment of stronger forces in order to achieve a real success. Quick orders and rapid execution are impelling requirements. As long as the situation requires, troops can be taken from the march and moved into the fight with little or hasty preparation. Circuitous routes or wide envelopments should be avoided in order to permit superior forces to attack the enemy in the beginning. The German regulations definitely state that it is faulty for troops to remain inactive until the situation is clarified.

In accordance with their non-offensive mission, the French commence their combat with only weak forces. Their reinforcement from the main body is entirely undesired. The main body prepares or alerts itself with the necessary strong forces for the attack. Less stress is placed on speed of the develop-

ment, and more stress is placed on the systematic, protected, and undisturbed routine of preparation.

The Germans omit everything which is too systematic in the conduct of the meeting engagement to avoid the danger of artificial refinements. They desire to defeat the enemy with a rapid employment of strong forces before the enemy can be in a position to carry out his battle plan. Ludendorff, in his book, *Der Totale Krieg*, states that the idea of permitting the enemy to advance in order to counterattack him is a dangerous refinement. The energetic aggression demanded by the German regulations develops a feeling of superiority over the enemy; whereas, the schematic conduct of the French has the tendency to subdue such a feeling. In order to avoid having the energetic aggression develop into a hurried attack, the German regulations direct that an attack is prohibited without adequate artillery support.

The difference between the two regulations is that the German regulations foster an offensive spirit—the will to destroy the enemy; whereas, that of the French develops a defensive spirit due to stress placed on security.

The French do not believe meeting engagements possible for large units, but they do give some minute instructions for the smaller units in the event of a meeting engagement. These are contained in the *Reglement de l'Infanterie*. This regulation states that should a battalion encounter determined resistance, and its mission permits, then it can attack with all its available troops. This is followed by definite instructions as to how this attack should be conducted; that is, the battalion is deployed with two rifle companies in the front lines and the third company in reserve with the heavier weapons. The two deployed companies are not to attack, but they must be prepared to support by fire the attack of the 3d Company, which advances through their lines. The two companies must also be ready to counterattack. In reviewing this regulation the question arises as to how much maneuverability the responsible leader has lost when only one schematic method of employment is dictated. According to the German doctrines, an attack can hardly have enough force when only one-third of the strength is used. Here the desire for security is greater than the will to win.

The German regulations allow the commander greater freedom of decision and maneuverability, and leaders have an

opportunity to act on their own initiative to gain results. This naturally can lead to repercussions, and the French fear these. The French regulations tie down the non-commissioned officer, allowing him very little initiative. The French desire, under all circumstances, that they be on the safe side, and therefore they run the risk of having their battle plan wrecked by an energetic opponent before it can get started.

The Germans believe that speed in rendering decisions, and rapid execution of plans, are superior to the schematic French methods. They believe that peace-time training of leaders and troops are necessary for energetic action without losing sight of the effect of modern automatic weapons.

---

### MANEUVER AND FIRE DIRECTION OF THE 75-mm. BATTALION OF DIVISION ARTILLERY

By Captain F.J. Tate, Field Artillery

The maneuver and fire direction of the 75-mm. battalion are:

Usually *decentralized* when the battalion is in direct support: during the approach march, in gaining contact, in the pursuit, in the covering force action, and in retrograde movements.

*Centralized* when the battalion forms a part of a groupment in support of a coordinated action or in direct support during the engagement.<sup>1</sup>

Except for the few concrete cases explained in our training regulations, only the general principles of the maneuver and fire direction of the battalion are covered.

This article aims to describe the methods of employing the 75-mm. battalion and the procedures applicable in certain cases to facilitate command and to increase the effectiveness of the fires of the battalion.

These methods and procedures might be grouped under four subheads:

1. Maneuver.
2. Reconnaissance.
3. Organization of fires.
4. Communications.

---

Abstracted from *Revue d'Artillerie*, January 1936. "La Manoeuvre et le Tir du Groupe de 75 Divisionnaire," by E. Cannasse.

<sup>1</sup>The term "engagement" pertains to that phase of the operation which we commonly term "development of the enemy position."

1. MANEUVER.—The battalion should reconnoiter and familiarize itself with the route of advance and with the terrain where it will probably enter into action.

Normally, this is the function of the advance reconnaissance and observation detachment, which, under the command of the orientation (reconnaissance) officer, reconnoiters and marks the route, and if necessary, proceeds in accordance with instructions of the battalion commander to make a preliminary study of the position area to be occupied by the battalion.

The route of advance should be carefully selected and should be made known to all commanders in the battalion. To avoid the possibility of interruptions in the advance, this route should preferably coincide with the axis of advance of a supported infantry unit (regiment, advance guard battalion). The reconnaissance officer will reconnoiter this route of advance and if necessary (in case of hostile road blocks, demolitions, gas) will modify the route and mark it.

When the battalion enters into action, the commander of each element (battalion commander, commander of the reconnaissance detachments, etc.) upon leaving the route of advance, posts a guide whose duty is to point out the location selected for the element he represents or to conduct the appropriate elements to their observation post, battery position, or battalion command post. The application of these procedures gives greater flexibility to the maneuver of the battalion.

In the approach march, the elements listed below are echeloned from front to rear in the order listed:

a. The advance reconnaissance detachment marches abreast of the infantry battalion command post, its commander placing guides at the point where he leaves the route of advance to make his reconnaissance.

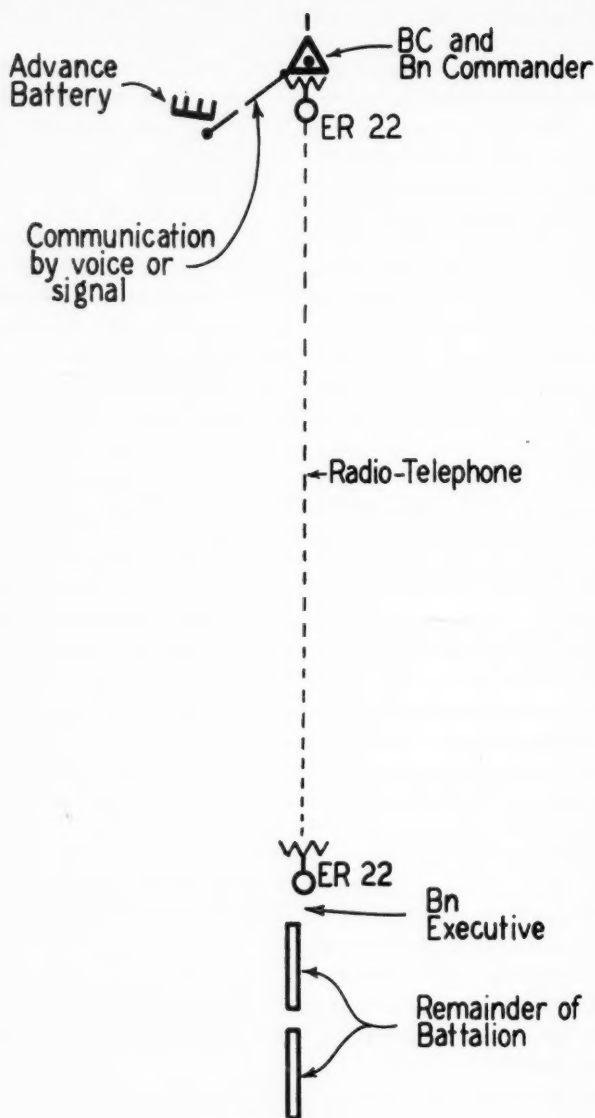
b. The battalion commander with his communication lieutenant and liaison agents march abreast of the commander of the supported infantry regiment.

c. Advance guard battery.

d. In rear of a *bound*: the battalion executive in command of the other two batteries, at the head of which march the battery details.

e. In the rear of the *bound*: supply columns.

On a retrograde movement necessitating reconnaissance and daylight occupation of positions, under cover of a bat-



SKETCH 1

talion remaining in position, the elements will be echeloned from rear to front in the following order:

- a. Supply columns.
- b. The advance reconnaissance detachment.
- c. The battalion commander and his liaison agents.
- d. Battery reconnaissance details.
- e. Communication lieutenant with communication sections.
- f. The batteries under the command of battalion executive.
- g. Reel carts, which took up wire at the old position.

The *orientation (reconnaissance) officer* will have at his disposal a detachment consisting of the mounted scouts of the battalion. When the terrain is to be reconnoitered with a view of entry into action, the detachment will be reinforced by the observation lieutenant, some mounted observers, the chief of the topographical section, and a communication detachment.

In the latter case, the reconnaissance officer is charged particularly with the reconnaissance for battery positions. In general, his mission will be to reconnoiter *first*, for an advanced battery position (preferably a position which will permit commanding the battery from the observation post), and then to locate two other battery positions (generally more distantly removed from the observation posts).

The *observation lieutenant* operating in close liaison with the reconnaissance officer, will be charged with reconnaissance for the battalion observation post and with a study of the terrain over the whole zone of action of the battalion (to include the right and left limits of the zone of action, the enemy infantry and our own infantry positions, successive objectives, and initial reference points).

The *communications detachment* will consist of the personnel necessary to operate an *ER 22* radio set, a visual signal post, and lay a telephone circuit from the observation post to the battery position. This detachment should be (as in the case of communication detachments accompanying the liaison sections with infantry) sufficiently mobile; that is, all telephone and radio operators, and signal men should be mounted on horses and the equipment transported on horses or pack animals.

Finally, the movement of the observation post to advanced locations will be facilitated greatly by providing the battalion with an armored (vehicular) observation post, safe against infantry small-arms fire and shell fragments, and capable of sheltering two people, the observation lieutenant and a radio operator



for radio set *ER 22*. The answer to such an observation post might be found in a tractor capable of movement over all kinds of terrain, and small enough to permit it to move readily through narrow passages, and facilitate its concealment.

In general, for the maneuver the staff will be divided into four separate groups:

a. The advance reconnaissance detachment under the reconnaissance officer.

b. The battalion commander accompanied by the agents, which provide liaison within the battalion. In some cases the battery reconnaissance details also will accompany the battalion commander.

c. Liaison detachments with the infantry under the command of liaison officers.

d. Communication details under command of the communications officer.

The commander of each fraction of the staff is charged with the organization of the personnel under his command and with the assignment of its mission, with the utilization of the personnel to the best of its ability, with furnishing his echelon information of the enemy and all details of the maneuver which it should know for its efficient employment.

2. RECONNAISSANCE.—The conduct of reconnaissance for the entry into action and the missions assigned to these reconnaissance parties will be influenced by the following:

a. The composition of the reconnaissance parties.

b. The time available for the reconnaissance prior to the arrival of the batteries.

c. The amount of advance information available relative to the probable position areas.

It is futile to attempt to define, at this time, the detailed functions of each person engaged in reconnaissance under all possible situations. However, due consideration should be given by all to the methods and procedures applicable under different situations.

During peace-time exercises we should give especial consideration to those cases which will probably occur more frequently in time of war. These exercises are beneficial in that they develop to the highest degree the initiative and aptitude of the personnel for maneuver.

This discussion will consider only the following cases:

a. Reconnaissance when only the minimum time is available for its completion.

b. Reconnaissance during the approach march.

c. Unanticipated entry into action.

a. *Reconnaissance when only the minimum time is available for its completion.*

In such cases, it is preferable to divide the zone of reconnaissance into two parts:

The *area of observation posts* which the battalion commander reconnoiters in person, accompanied by the observation lieutenant and the communication lieutenant.

The *area of battery positions* whose reconnaissance is entrusted to the battalion executive, assisted by battery reconnaissance details and the orientation (reconnaissance) officer. The battalion commander states when and where the executive will submit his reconnaissance report.

The battalion executive subdivides his area of reconnaissance according to its extent into two, three, or four areas; he personally reconnoiters the command post area, and if possible the area nearest to the probable location of the battalion observation post.

He causes the commanders of the limbers to make a reconnaissance to determine suitable locations for the limbers.

At the prescribed hour the battalion commander, having determined the location of the battalion observation post and the advanced central, returns to the appointed rendezvous where he receives the reconnaissance report of subordinates. The information so obtained enables him to decide where to emplace the batteries, the limbers, the battalion switchboard, and to determine what communications to establish and what topographical preparations are necessary to open fire.

The battalion commander, having issued orders for the occupation of position, returns to his observation post, where he is met by designated battery commanders as soon as the battery commanders have completed their battery reconnaissances.

Communication is established. The orientation (reconnaissance) officer initiates the topographical preparations for opening fire. The executive organizes the battalion area, the interior defense of the battalion, antiaircraft defense, camouflage, organization of terrain, and prescribes the location of the

first-aid station in accordance with recommendations of the battalion medical officer.

The observation lieutenant continues his study of the terrain and the preparation of the firing chart. Upon arrival of the observers and other batteries, he points out the situation on the terrain and, if necessary, directs supplementary reconnaissances for the completion of the battalion observation system.

*b. Reconnaissance during the approach march.*—As was stated previously, the battalion marches preceded by the advance reconnaissance detachment, and an advanced battery available for immediate employment.

The battalion commander remains in constant liaison with the supported infantry commander, and with his reconnaissance officer, who at each bound reconnoiters the terrain with a view to the entry into action of the artillery.

The battalion commander makes his decision quickly; the advance battery is brought forward immediately by a marker posted by the reconnaissance officer to guide it forward.

The battalion executive, foreseeing the entry into action of the advance battery, is prepared to place the remainder of the battalion in position either in his immediate vicinity or to the rear. He initiates the necessary reconnaissances and remains in liaison with his battalion commander by radio (ER 22) and mounted agents.

The orientation lieutenant continues his reconnaissance of the terrain in accordance with the battalion commander's orders, with a view to the reinforcement of the advance battery by the other two batteries of the battalion.

*c. Unanticipated entry into action.*—The presence of mechanized forces will necessitate frequent unanticipated entry into action. The personnel will have only a limited time to take up defensive dispositions. The execution normally will lack all evidence of control.

We should always bear in mind, in such cases:

That while attempting to disengage from combat and to intersperse covering forces, the combat trains and other non-combatant vehicles should remain under effective protection of the artillery which is in position.

That in case of attack by infantry or cavalry, all armed personnel should participate in the combat under the direction of their respective leaders.

The reflexes of the personnel are crystalized in peace-time exercises, especially during maneuvers and fires executed under widely varied situations.

3. ORGANIZATION OF FIRES IN THE BATTALION.—Efforts should be made to:

Increase the speed and accuracy of transmission of firing commands.

Simplify control of preparation and execution of the fires of the batteries.

Enable the battalion commander to personally take command of all or part of the battalion to fire urgent concentration in appropriate situations.

a. *Transmission of firing commands.*—It is possible, by following certain conventional methods, to reduce considerably the time required for the transmission of firing commands and messages and thus expedite their transmission by telephone, signal, or radio.

(1) *Designation of targets.*—Base points (reference points) are always used to designate targets.

It appears preferable to use letters to designate the plotted location of visible points in the target area and to use numerals to designate plotted locations of points or targets which are not visible.

A common practice (using letters from left to right on the firing chart, and numerals in the direction of fire; smaller numbers for nearest targets) is to leave blanks (numbers and letters) for assignment to unforeseen points for completion of the firing chart.

When the target is designated by coordinates, it is understood that these are the coordinates of the center of the target. The width and depth indicated, in designating the target, are the maximum and are respectively perpendicular and parallel to the direction of fire of the batteries.

When the target is designated on an overlay or a map, the extreme width and depth of the target are not given.

The nature of the objective is not indicated in case of personnel in the open or with slight cover (normal 75-mm. targets).

(2) *Subdivision of the objective.*—The battalion commander prescribes only one zone when the objective is less than 60 mils wide, each battery covering the entire objective. For a front between 60 mils and 120 mils (second case), the objective

is divided into two equal zones, each covered by a battery, the third battery being superimposed over the entire front. For a front greater than 120 mils (third case) the objective is divided into three equal zones, each assigned to a battery.

The battery which is superimposed over the zone of other batteries is designated immediately upon the occupation of positions; usually this will be the center battery<sup>2</sup> or the battery more distantly removed. It fires over the entire zone or on the center zone. The other two batteries fire on the right or left zone, depending on their respective locations.

(3) *Lines to be reached.*—No line is prescribed in the case of neutralization fires (the normal use of 75-mm. fires).

(4) *When firing on animated targets,* the entire zone is covered from the beginning. Moreover, the battalion commander, in order to facilitate control of the fires, prescribes different types of ammunition for the batteries.

In the first case (that is, when the zone is not greater than 60 mils wide, and is covered by all three batteries), the right (left) battery ranges through the zone by increasing (decreasing) range changes, both batteries using high explosive shell. The third battery covers the entire zone and fires scissor sweeping, using time shrapnel.

In the second case (that is, when the zone is between 60 and 120 mils in width, and is subdivided into two zones, each assigned to a battery, with the third battery superimposed over the entire zone), the right and left batteries fire as prescribed in the first case. The third battery searches the zone using time shrapnel, the first section by increasing range changes, and the second section by decreasing range changes.

In the third case (that is, when the zone is greater than 120 mils and each battery is assigned a zone), each battery fires scissor sweeping in its own zone, using high explosive shell.

(5) *Duration of fire and ammunition allowance.*—The duration of fire and the ammunition allowance are prescribed in advance in the case of fires on unprotected personnel or on personnel with light shelter; for example: 3 minutes at 4 rounds per minute. This procedure eliminates the necessity for the transmission of orders relative to the duration and rate of fire in such cases.

<sup>2</sup>Usually, the battery commander remains at the battery position and answers calls for fire from airplanes. A forward observer from the battery remains in close proximity to the battalion observation post, readily available to the battalion commander.

(6) *Method of opening fire.*—In the case of a battalion concentration, the control battery (the one assigned to cover the entire battalion zone) is adjusted by the battalion executive, the battalion commander prescribing only the time the concentration is to be fired.

In the case of a groupment concentration, the battalion commander will announce, prior to prescribing the time for opening fire, "through the battalion command post."

The batteries connected by telephone through the battalion central, remain alerted commencing two minutes prior to the time fixed for opening fire, their fire being placed at the disposal of the central.

The use of these methods expedites the transmission of commands. Examples of firing commands follow:

Concentration No. 19, 7:25

Concentration 78-40, width 200, depth 400, 7:35

Concentration 82-51, width 300, depth 400. Through  
Command Post, 7:45

Concentration, battery in action, 86-70, width 200,  
depth 300, high explosive, 4 minutes, rate 6. 8:15

Concentration No. 21, 400 yards short, 8:50.

(7) *Observed fires.*—Depending on the width of the zone and the field of view of the observation posts, the battalion commander might assign the entire front to all batteries, divide it into two battery zones, the third battery covering the entire zone, or he might divide it into three zones.<sup>3</sup>

*In the first case*, the battalion commander retains fire direction of the observed fires, and assigns fire missions to the batteries as targets appear. He designates the targets in the manner prescribed by regulations (horizontal shift from a base point or reference point, site, and brief description of the targets), and also prescribes the ammunition allowance.

The battery commander is permitted to decide on the method of adjustment.

*In the second case*, the battery commanders decide when to open fire in their respective normal zones, providing the ammunition allowance is not exceeded, it being understood that a report is rendered on each fire mission. The battalion com-

<sup>3</sup>The battalion being normally echeloned in depth with one battery within voice distance of an observation post, and two batteries farther to the rear, will assign targets of opportunity over the entire battalion zone to the forward battery, and assign schedule fire missions to the two rear batteries; these latter being controlled by the observation lieutenant.

mander intervenes only to reinforce the fires of a battery or to designate targets which are being overlooked by the batteries.

The concentration of several batteries on visible targets will be exceptional; the majority of such targets can be handled effectively by the adjusted fire of a single battery.

Important targets, such as hostile counterattacks, attacks by hostile tanks, and the like, are taken under fire instantly by all batteries which discover them, whether or not these targets are in their respective normal zones.

In such cases, to shift the fire of a battery, it will usually be sufficient to indicate the target as follows: "Battery B, fire on hostile counterattack already taken under fire by Battery A; the group of burst on the ground indicates the location of the target."

Finally, in exceptional cases, when it becomes necessary to fire a battalion concentration, the procedures enunciated above are applicable, it being understood that the width of the target is always given in mils as seen from the observation post; for example:

Concentration—wooded area at Ac 2, width 60 mils, depth 200 meters, 9:05.

For the effective execution of such fire missions the battalion should be organized as discussed in the following paragraphs:

*b. Control of the preparation and execution of the battery fire missions.*—Commencing with the emplacement of the batteries, the battalion executive has available certain personnel whose functions are:

(1) To keep the firing chart posted up to date with the details of the zone of action (targets, our own and enemy front lines).

(2) To prepare a chart to be employed for the preparation of fire, on which the directing piece of each battery, their direction of surveillance, and the observation posts are plotted. This chart is graduated in range and deflection for the directing piece of the directing battery (graphic or by the use of a piece of celluloid). This chart is gradually built up by plotting newly discovered targets and targets taken under fire.

(3) To make a table of correction for parallax, range, and site for the control battery, such that the table of corrections for range and deflection results from a knowledge or appreciation of weather corrections.



Subsequently, the preparation of fires and their control by the battalion is simplified. This means of control is effective, rapid, and capable of discovering errors of certain magnitude (larger than 5 mils in deflection and 50 yards in range).

Generally the range and deflection are determined by one of two methods (calculation or measurement on the fire control chart); the same applies for the elements of departure (from firing tables, tables of correction for weather, either provisional correction tables or corrections of the moment).

From the beginning, the executive causes a record to be made of the results obtained by adjustment. This data is available for use by other batteries.

If the battalion remains in the same position for a prolonged period, the organization of fires is perfected; new data obtained by topographical preparations is plotted on the battalion chart, and gradually the battalion fire direction chart becomes a mechanical calculator of data. This battalion executive uses this battalion chart to compute the data for battery fire missions on various targets. This chart is also a permanent record of orders received and issued, and if desired, a printed record of the firing commands of the battalion commander.

*c. Fires controlled by the battalion commander.*—Such fires are justified when it is desirable to neutralize quickly a hostile target. When the battalion commander desires to concentrate the fire of two or three batteries, time can be saved (and the possibility of errors in designating the target eliminated) by transmitting the firing data directly to the batteries.

When the target is close to a base point, and the firing data is available for all three batteries, the battalion commander announces the data with reference to the target and the base point; for example: Battalion concentration—on point A, 40 over 5 left, range..... 9:45

Fire is opened at the command of the battalion executive at the prescribed time.

The assignment of the fire missions, allotment of ammunition, and procedure are as explained above for the concentration of the fires of the three batteries (first case): If the target is located in the battalion contingent zone and the organization of the battalion firing chart permits, the battalion commander will transmit directly to the batteries the necessary firing data (direction, sheaf, site, extreme range); for example:

Concentration in the right contingent zone:

1st Battery—Right 200, open 10, site plus 5, 4400-4800, 9:30

2d Battery—Right 200, open 10, site plus 5, 4400-4800, 9:30

3d Battery—Right 200, open 10, site plus 5, 4400-4800, 9:30.

Instructions relative to ammunition and the procedures of fire control are as explained in the first case.

*d. Conduct of fire.*—The battalion commander conducts or causes the fires to be conducted from the observation posts.

In the case of a battalion concentration, he controls the laying of the battalion.

The application of the methods explained above permits him, in case of error, to determine instantly the erratic battery (ammunition or method of fire).

If doubt still exists as to the erratic battery, he might suspend the fires of each of the batteries, in turn, until the battery in error is determined. Depending on the situation, he will bring this battery back on the target, or silence it, and increase the rate of fire of the other batteries.

In case of fires which he conducts personally, the battalion commander transmits directly to the batteries, the individual or collective corrections necessary to place the fires on the target or to follow the target in case the target moves.

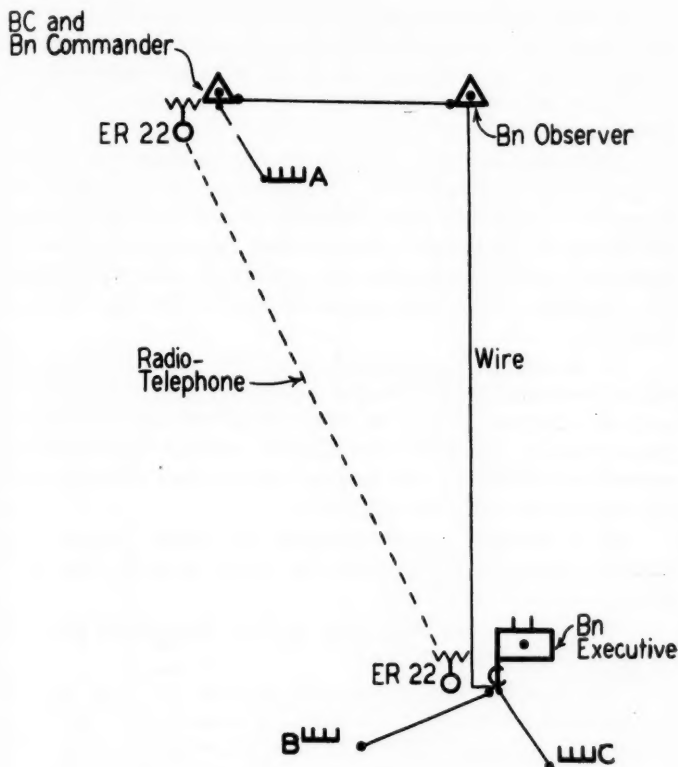
Finally, when observed fires are conducted by a battalion observer, the fires can be conducted, in case the position of the target and observer are not accurately known, by the method of displacing the mean point of burst, the battery firing a round of time shrapnel, followed by a series of 8 to 10 rounds which the battalion observer locates with reference to the geographic coordinates of the target.

4. COMMUNICATIONS.—Connected only by liaison agents, messengers, and by radio, during the approach march, the (interior communication) intercommunication of the battalion requires a progressive installation of more dependable means, beginning the moment when the battalion, in order to diminish its vulnerability, disperses its installations over a wider front.

Since it is impracticable to discuss in detail the establishment of battalion communications, for all types of entry into action, only the progressive establishment of communications within the battalion which finally arrives at a communication

system will be discussed, which experience has revealed to be flexible and appropriate to the needs of the 75-mm. battalion. The discussion will be that of the 75-mm. battalion forming a groupment during the approach march and gaining of contact.

a. *Interior liaison.*—The advance guard battery should be able to fire as soon as it reaches its position; usually it will be commanded by voice or visual communication from the observation post.



SKETCH 2

The battalion commander will usually be in the vicinity of the battery observation post, and will exercise fire direction

in person. Liaison with the battalion executive, who commands the other echelons of the battalion, being maintained by radio, visual signal, liaison agents, or messengers. (See Sketch 1)

As soon as the situation requires the entry into action of the rear batteries to reinforce the forward battery, the battalion commander will cause a telephone circuit to be laid from the observation post to the positions to be occupied by the batteries.

As soon as the batteries arrive at these positions, they will run a short line connecting their batteries with the end of the circuit laid by the battalion, where the battalion executive will install the rear switching central and radio station (ER 22). (See Sketch 2)

When the battalion remains in one position for a prolonged period, its dispositions are rearranged; the batteries and observation posts and other installations are dispersed to take advantage of the terrain; the battalion communication net is developed until a communications system as shown in Sketch 3 is installed. This communications system provides for (see Sketch 3):

(1) An *advanced central* connected directly with the observation posts and a rear central, connected with the batteries and the advance central. In addition to providing the usual communication facilities, this system permits the battalion commander to control the battery commanders directly from his observation post (first priority).

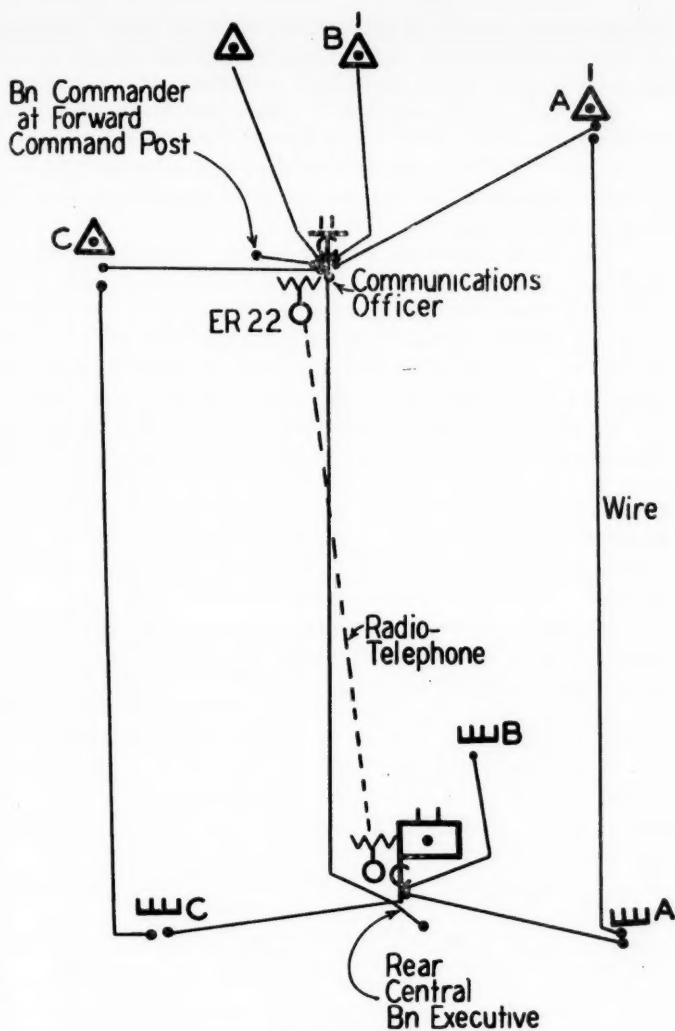
(2) A separate communications net which permits the battalion executive to command the three batteries (first priority).

(3) A direct line from each battery observation post to his battery (second priority).

The telephone line between the advance and rear central is supplemented by radio and mounted messengers.<sup>4</sup> The lines between the advance central and observation posts are supplemented by messengers, and those between the rear central and batteries and between observation posts and batteries, by visual signal and mounted messengers.

---

<sup>4</sup>The use of (mounted) messengers should not be overlooked in the transmission of orders for preparation and for supported attacks, since this method normally is quicker and more accurate than telephone messages, and since these messages can be accompanied by maps.



SKETCH 3

In case of interruption in the direct circuit from battery to observation post, the circuit from advance central to rear central, supplemented by radio ER 22, provides an alternative

means for the conduct of fire, priority of its use being controlled at the advance central by the communications officer and at the rear central by the battalion executive.

This communications system differs from the conventional type which called for a trunk line of three circuits (two of which were laid by batteries) between the advance and rear central, without direct communications between the observation posts and batteries.

It is to be noted that the conventional system is excellent, provided that the system is established with equipment which is in good condition, and operated by trained personnel, which observes strictly the rules of telephone conversation. These conditions are not always fulfilled. It permits an accurate recording of messages and facilitates intercommunications.

However, it is poorly adapted for two-way conversation between the observation post and battery necessary for the conduct of fire. This is normal in the case of 75-mm. batteries whose commanders are frequently charged with the conduct of observed fires. These fires can be accomplished only by batteries relatively close to their observation posts and connected by short, direct, and reliable communication lines.

*b. Exterior liaison.*—Having ample means for modern radio communication during the approach march, the battalion will keep with him the ER 17 (for liaison within the division artillery net or the groupment). An R 11 set (air-ground) and an ER 22 set (employed for station to station communication with the liaison officer with the infantry), and an R 11 set (placed at the rear central to listen in on the infantry net).<sup>5</sup>

As soon as the battalion enters into action, these sets provide immediate liaison with the supported elements. As soon as practicable, wire communication with infantry, supplemented by mounted messengers, is installed.

Liaison by radio with the groupment or with the division artillery is supplemented by motorcycle.

## CONCLUSION

The methods and procedures of maneuver described above are not all original with the author. Many of them are finding

---

<sup>5</sup>The battalion commander who is marching with the supported infantry regimental commanders can make use of this station, momentarily, for communications with his battalion executive.

current employment; others are new. All are employed with the same idea in mind, namely, an effort to increase the effectiveness of the battalion. These methods have given satisfactory results to all who have employed them.

Efforts have been made merely to present means which have been tried and found satisfactory, hoping also to provoke valuable studies on this subject, and perhaps also to render useful service to those who are just about to face the problems of commanding a 75-mm. battalion of division artillery.

---

### THE LANDING AT ANZAC

By Major F. During, Infantry

On 24 March 1915, Enver Pasha, the Turkish war minister, placed the defense of the Dardanelles under the German General von Sanders. This officer estimated that the main landings would be attempted at Bulair on the European side, and Besika Bay on the Asiatic shore. Thus for the defense of the western coast of the Gallipoli peninsula, from Suvla to Sedd el Bahr, some twenty miles in length, only one division (9th) was allotted.\*

At Ari Burnu, where the Australian and New Zealand Corps eventually landed, two front-line company sectors (27th Infantry) joined, each of these companies being responsible for the defense of about a mile and a half of coast line. The reserve company was about a mile east of Gaba Tepe. One mountain battery was in a position on 400 plateau (see sketch), and guarding the coast at Gaba Tepe were two 120-mm. guns, while two 150-mm. guns were a little inland from that point.

Although the coast was weakly defended, reserves were well situated to oppose a deep penetration. The two battalions forming the reserve of the 27th Infantry were four miles from Ari Burnu in the direction of Maidos, and the general reserve of eight battalions (19th Division), with artillery, was located at Boghali, about four miles east of the landing place.

Concerning this portion of the front, it was thought at British general headquarters that two or even more divisions

---

Abstracted from *Journal of the United Service Institution of India*, January 1936. Article by Major H.C. Westmorland

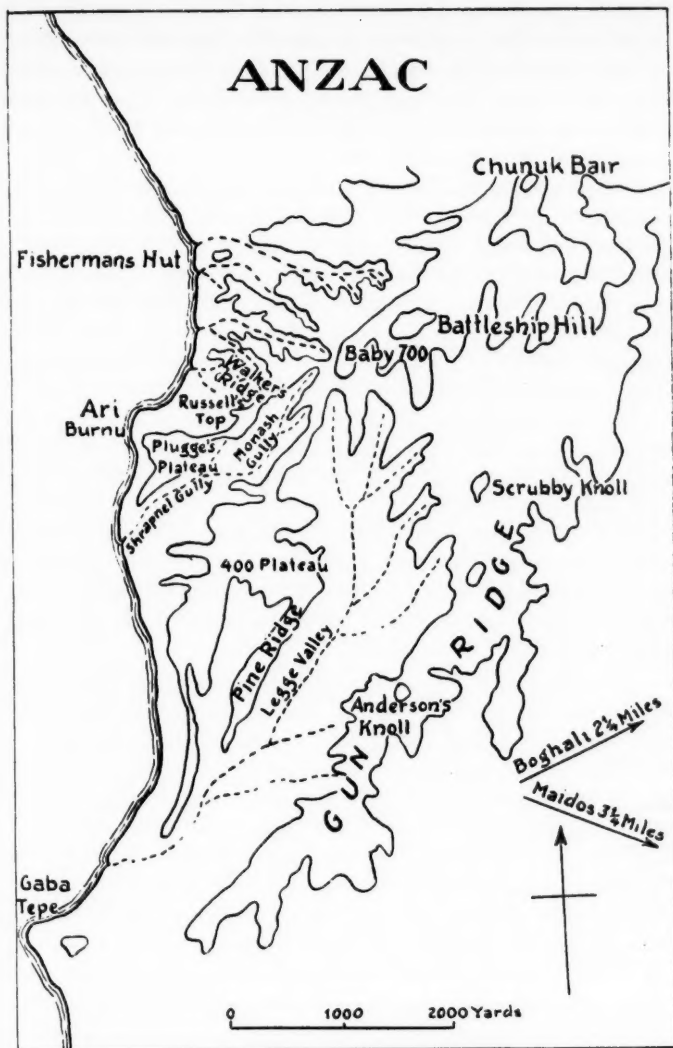
\*The Turkish 9th Division consisted of three regiments of infantry, three batteries of field artillery, and two mountain batteries. A regiment consisted of three battalions and a machine-gun company. Each battalion had four companies.



might be available for the defense of this western shore of the peninsula. The lack of accurate information about the enemy was attributable to the shortage of aircraft. This shortage was to be felt in many ways. By the first week in April 1915 no photographs had been taken over the enemy lines owing to a shortage of cameras. Bombing missions, however, were carried out and a certain amount of information collected. It is interesting to note that on 23 April the reserve battalions of the 27th Infantry were bombed out of the village of Maidos, but unfortunately moved into bivouacs  $1\frac{1}{2}$  miles nearer Gaba Tepe. At this stage, and particularly in this type of operation, air photographs would have been invaluable in checking the many inaccuracies in the maps provided. Adequate reconnaissance of the terrain over which the first battle has to be fought must always have priority when landing on a little known enemy coast is contemplated.

The area into which the Anzac Corps was to advance may be described as a tangle of nullas, ravines, precipices, and small plateaus. In addition to these difficulties of terrain, the high ground on the north flank of the operation was for the most part covered with a low brush. This could be seen from the sea, but the resisting nature of that brush was never suspected before the operations began. Standing some three feet high and interspersed with prickly dwarf oak, its stubborn bushes are often so close together, and so thorny, that even a strong man has difficulty in forcing his way through. In the attack, therefore, it is a serious obstacle to movement while it has the further disadvantage that men lying down in it are unable to see their neighbors on either flank. But for snipers, or for infantry delaying a hostile advance, the cover that it affords is almost ideal.

East of Ari Burnu the ground generally forms itself into three ridges. The first ridge comprises features subsequently known as Plugge's Plateau, Russell's Top, and Walker's Ridge. The seaward side of the long narrow plateau, known as Russell's Top, is almost unclimbable, being an almost vertical cliff some 300 feet high. At the south end of this the ridge suddenly contracts for 200 yards into a veritable razor edge, impassable even by infantry, with a deep chasm on either side. Nearest the sea is Plugge's Plateau. According to the map, it appeared possible to advance from here, along the high ground, to Baby 700. The razor edge was to play an important part in the operations.



The second ridge forms the eastern side of a deep ravine known as Shrapnel and Monash gullies. To the south it consists chiefly of a plateau known as 400. This narrows northwards to the southern slopes of Baby 700. This last hill commands

Shrapnel and Monash gullies, the only line of communication between the upper portion of the second ridge and the coast.

The third ridge was known as Gun Ridge. This starts south of Chunuk Bair and finishes near Gaba Tepe. Scrubby Knoll to the north, and Anderson's Knoll to the south of this ridge are features to note.

The task allotted to the Anzac Corps was to land north of Gaba Tepe and cut the Turkish communications between Gallipoli and Sedd el Bahr. The covering force was to be the Australian 3d Infantry Brigade, which had orders to capture the guns on 400 Plateau and occupy Gun Ridge, their left resting on Chunuk Bair. On the right, troops were to clear Gaba Tepe and disable any guns found there. This gave the brigade a responsibility for about 6,000 yards of frontage.

The 2d Brigade, which was to land immediately after the covering force, had instructions to extend the front northwards to the highest point of the third ridge, Hill 971, a mile northeast of Chunuk Bair, and protect the left flank by holding a line between there and Fisherman's Hut. The 1st Brigade formed the reserve for the Australian 1st Division. Arrangements were made for the Indian 7th Mountain Brigade to be landed as early as possible in the morning and to be attached to the covering force on arrival.

The orders by the commander of the covering force were for the 9th Battalion to land on the right, two companies to clear Gaba Tepe, and the remaining two to make for Anderson's Knoll; this battalion would therefore operate on a frontage of 3,000 yards. The 10th Battalion was to land in the center, capture the guns on 400 Plateau, and occupy Scrubby Knoll on Gun Ridge, while the 11th Battalion was to seize the northern end of this ridge and Chunuk Bair. The remaining battalion (12th), was in brigade reserve. The mountain guns, on arrival, were to go to 400 Plateau.

Naval support was arranged as follows:

- (1) The covering force commander was to ask for ships' fire by signal.

- (2) The fleet was to fire by observation on any Turkish troops or guns definitely seen.

- (3) On each flank an artillery officer was to act as an observer for the ships. Messages to the beach by telephone, thence by radio to the flagship.

It should be noted that in the actual operation, no ship fired till 5:00 PM, largely owing to the difficulties of communication. Probably some form of timed program would have been better.

The time the leading troops were to reach the shore depended on the hour of the moon's setting; on 25 April this was at 2:57 AM. This meant that the first tows could not be landed before 4:30 AM, which was half an hour after first light. General Birdwood considered that a night landing was the best means of obtaining surprise, but the danger of ships being silhouetted against the moonlit sky made this not quite possible.

Corps orders laid down that wounded were not to be evacuated to ships till the infantry of the Australian 1st Division was ashore. The order of this division did not sufficiently emphasize this. It read: "The navy launches equipped as hospital boats will begin to ply from shore to ship after the infantry of the division is landed." Disobedience of the spirit of this order was a contributory cause of the program for the landing getting nearly four hours behind schedule.

At 1:00 AM, on 25 April, the battleships had reached their rendezvous and boats were being lowered. At 2:35 AM all tows were ready, and when the moon had sunk behind Imbros, the three battleships, with 1,500 men on board, destroyers carrying the remainder of the covering force, steamed slowly towards the peninsula. At 3:30 AM the battleships anchored within  $2\frac{1}{2}$  miles of the shore, and 48 cutters, in 12 parallel columns, were being towed ashore by steam launches.

The landing was a complete surprise. Owing to an error in navigation, the boats were beached a mile farther north than had been intended, but the original place selected had been better prepared by the Turks. At Ari Burnu there was only one sentry group, which opened fire, and a few small posts overlooking the beach. Without waiting to reorganize, the troops pushed rapidly inland.

The effect of the error in navigation was that the first tow landed on a very narrow front and units became confused from the start. The troops had been told to expect a low sandy bank skirting the beach, but they must have disappeared into the ravines before new orders could be given to them. It is improbable that the junior officers did not realize what had happened until it was broad daylight.

At 5:00 AM the situation was roughly as follows: The 9th Battalion was very scattered. About 100 men, under an officer, were being led across Shrapnel Gully to the north end of 400 Plateau. The 11th Battalion was reorganizing in a gully forking northeast from Shrapnel Gully, just east of Plugge's Plateau. Some were still near the beach, pinned down by machine-gun fire from Fisherman's Hut. In the meantime the 12th Battalion landed from the destroyers, but instead of remaining in reserve, they got caught up in the advance. Parties of this battalion reached 400 Plateau ahead of the battleship parties and captured the guns there.

The commander of the Australian 3d Brigade arrived at the southern end of Plugge's Plateau about 4:40 AM. Owing to the brush and the ravines which hid the troops, he was unable to estimate the situation. He knew there were no troops between him and Gaba Tepe, but the volume of the enemy's fire was negligible and there were no signs of any further enemy approaching. He decided to advise the commander of the 2d Brigade that his troops should be employed on his right instead of on his left. The wisdom of this decision seems doubtful, since the points of tactical importance were on the left flank, namely Chunuk Bair and Baby 700.

About this time the commander-in-chief appeared in *Queen Elizabeth*, and received the report that the troops were a mile inland. Presumably this was the report from General Birdwood as of 6:39 AM in which the capture of 400 Plateau was reported, although the British Official History records the fact that at 6:00 AM the commander-in-chief headed south for the toe of the peninsula. It would appear that general headquarters still thought that the thrust from Helles was to be the decisive blow. Possibly had the commander-in-chief remained a little longer and learned the real situation at Anzac, a brigade might have been diverted from Helles and employed where there was obviously a tactical advantage worth exploiting. Gaba Tepe is two miles nearer the heights overlooking the Narrows than Helles, and it is surprising that so much importance should have been attributed by general headquarters to the southern landing. In the light of after knowledge, one organized brigade to hold some sort of covering position, behind which the Australians might have reorganized, would have turned the scale easily in the attacker's favor.

At Maidos the commander of the Turkish 27th Infantry heard of the landing an hour after that event. His troops, however, were not ready to move until 7:30 AM, and it was not until 9:00 AM that they were seen by the Australians filing up Gun Ridge from the south. At this hour, therefore, the Turks opposing the advance could not have been numerous, and already 8,000 Australians had landed, although in the original orders it had been hoped to have landed more by this time. The delays and their cause will be referred to later.

The real trouble, however, was to begin when the Turkish 19th Division, under Mustapha Kemal, was ordered to detach one battalion towards Chunuk Bair to watch the right. This officer quickly grasped the threat to the Turkish communications and ordered a whole regiment to move as quickly as possible. He himself rode forward with a company to gain first-hand information. At 10:00 AM this company came in contact with Australian troops on Baby 700 and to the north-east of it. Later in the afternoon, counterattacks here seriously threatened the Australian's hold on this part of the peninsula. A Turkish force moving south from Baby 700 to Russell's Top could outflank a position on 400 Plateau or even take it in reverse. Chunuk Bair and Baby 700 were of considerable tactical importance, and had they been strongly held by the first troops to land, the Turkish reserves would not have interfered to such purpose as to cause talk of evacuation.

In the meantime, at 7:00 AM, an officer and two scouts reached Scrubby Knoll and scattered groups of men were in possession of Pine Ridge. These forward elements remained unsupported owing to delays in landing the 1st and 2d Brigades and to a decision by the commander of the 3d Brigade to entrench 400 Plateau instead of supporting troops in front. Delays in landing at this time were caused by the shelling of the anchorage, which made the transports stand out farther from the shore, and the disregard of orders for the evacuation of wounded. The return of boats for more troops was held up while wounded were being embarked. Added to this there was lack of organization on the beach, no naval or military personnel for this purpose being landed until 10:00 AM. Even when troops were landed the change of orders for the 2d Brigade must have caused further confusion, since the issue of orders under the conditions prevailing at this time must have been difficult.

At 10:45 AM, one and one-half battalions of the New Zealand Infantry Brigade, under Brigadier General Walker, were made available. General Bridges, commanding the Australian 1st Division, decided to use them to restore the situation on Baby 700. This situation had been caused by the advance elements of Mustapha Kemal's 19th Division. The New Zealanders started off by way of Walker's Ridge, but General Walker decided that the ground was too difficult and changed the line of advance to that via Plugge's Plateau and Russell's Top. The change of orders caused confusion, and the troops also became involved with the razor edge east of Plugge's Plateau. The result was that not more than one company reached a position west of Baby 700, and then not until 1:00 PM. By 3:00 PM no one seems to have been in command of this left sector. The scattered companies were not coordinated, and no one seems to have known the plan. The troops had done very well, but casualties in officers had brought movements to a standstill.

At 4:00 PM the full weight of the counterattack on Baby 700 was being felt and troops fell back, gaps appearing in the line. Initiative had passed to the enemy. By 5:00 PM the remainder of the New Zealand Brigade and the Australian 4th Brigade had not yet landed, and there were no troops to restore the situation on the left, where the absence of counter-battery work was trying the troops very highly. Enemy batteries from the direction of Chunuk Bair had been troubling the Australians since 1:00 PM.

About this time further delays were caused at the beach owing to lack of decisions by the division staffs. It could not be decided whether more troops were to be landed or whether evacuation was to be ordered. Lack of orders, the consequent demoralizing rumors, failure of beach organization, resulted in the lack of support to forward troops at a critical time.

During the evening Turkish counterattacks were to add to the general discomfiture by preventing reorganization.

The narrative of events points plainly to several lessons: Poor beach organization means grave delays. Delays in this type of operation, where success depends on exploiting any surprise, are absolutely fatal. A tactical surprise had been achieved, but numbers could not be produced quickly enough to take advantage of it. The confusion and difficulties caused by deploying from a narrow front, although this was no fault



of a military commander, confirms the wisdom of the original order to land on a frontage of nearly a mile. Overcrowding on the beach is to be avoided, particularly when the beach is narrow.

The influence of terrain on the movements of troops is well illustrated, providing an example also of the need for reconnaissance by all means available so as to avoid being surprised by the terrain. The delaying power of well concealed marksmen in this brush-covered country was most apparent, and snipers took heavy toll of those who put their heads up to reconnoiter.

The operations furnish an example of the need for leadership. Numbers are useless without coordination; this is illustrated by the lack of progress made by 8,000 Australian troops against about 500 of the enemy. The opportunity to make progress after 9:00 AM never reoccurred.

The landing of the Australian 1st Division headquarters three hours after the initial disembarkation might be considered a contributory cause of failure. The decision to employ the 2d Brigade on the right might not have been made had division headquarters been represented on shore. The position of commanders needs careful study in landing operations. The position of the commander-in-chief, confined in *Queen Elizabeth* at Sedd el Bahr is open to the gravest criticism. He could not have been fully aware of the situation of the troops at Anzac until very late in the day.

The British Official History states that the ease of the initial landing may have caused a false sense of security. The will to win can never be too highly cultivated, but this must be tempered by a reasoned respect for the enemy. The study of the characteristics of foreign armies might well be deserving of study by officers.

The value of discipline and training is self-evident, but this type of operation calls for the highest form of both. The lack of supporting fire was a handicap to the troops; the ships did not open fire till 12 hours after the landing, and the orders cancelling the landing of the artillery deprived the troops of this moral support. Absence of aircraft was to deprive commanders of the information about the progress made by forward troops and neutralized the presence of naval artillery. The maps issued were of little assistance; in this type of operation good maps are of paramount importance because of the limited reconnaissances possible.

Many other lessons may be deduced from the landing at Anzac. General Callwell, in his *Dardanelles Campaign*, points out that a maritime descent against the coasts of a well organized enemy with good rail and road communications is a most hazardous and difficult enterprise.

---

## EMPLOYMENT OF MOTORIZED MACHINE GUN BATTALIONS

### An Analysis of Historical Examples from Mobile Warfare

By Major G.J. Braun, Infantry

During the World War nearly all special machine-gun units were used in position warfare and were either horse-drawn or loaded on trucks. There are no examples of their use in mobile warfare. These units could be of great use under mobile conditions due to their mobility and fire-power. An effort will be made to demonstrate how they could have been used in certain situations in the battle of Tannenberg, 1914. (See Sketch No. 1)

## DEFENSE

On 20 August 1914, the German XX Corps was located in the vicinity of Ortelsburg to protect the south flank of the German Eighth Army which was engaged at Gumbinnen. According to available reports, a hostile force, consisting of approximately 2½ corps, was approaching the frontier sector: Ianowo—Willenberg—Friedrichshof coming from the Narew. It was intended to repel this hostile force by an attack against his west flank. For this purpose the XX Corps was organizing a strong assault group. (See Sketch No. 2)

The mission of the motorized machine-gun battalion, which up to this time should have constituted the mobile reserves, would have been to take position near their own weak outposts behind the border at Neidenburg and occupy this strong point early enough to cover the concentration of the contemplated assault group and to protect the west flank of the corps during the engagement. It could have been possible for a motorized machine-gun battalion to occupy and be prepared to defend the heights south of Neidenburg within two hours, which would

---

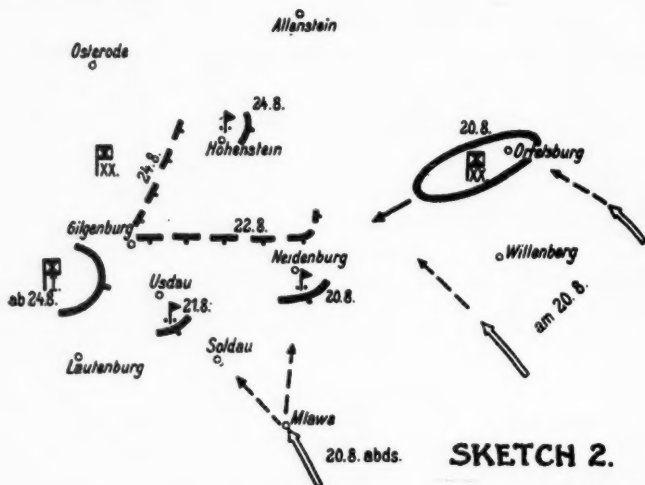
Abstracted from *Militär-Wochenblatt*, 4 March 1936. "Verwendungsmöglichkeiten motorisierter MG.-Bataillone. Eine Untersuchung an Beispielen aus dem Bewegungskrieg," by Captain Ponath

have given the battalion one and one-half hours for the displacement forward and one-half hour for reconnaissance and selection of its position.



By evening the approach of another hostile corps against Mlawa was reported. The new enemy had taken the shortest and most dangerous direction toward the flank of the Eighth Army. The contemplated attack at Neidenburg against the

former hostile west flank was in turn threatened in its flanks and was therefore called off. The German XX Corps was in hopes that by shifting the main effort to the west from the vicinity of Gilgenburg, it would be able to attack the hostile west flank. On 21 August a race was in progress to gain the extreme flanks.



**SKETCH 2.**

The new mission for the motorized machine-gun battalion could have been to make the necessary precautionary move to meet this danger so that on 21 August the progress of the hostile western flank via Mława would be delayed. This would have necessitated the occupation of a preparatory position in the vicinity of Usdau early on 22 August, in order to be prepared, upon receipt of information of hostile moves, to offer resistance on the Söldau—Neide sector, at Söldau or at Neidenburg. Simultaneously the motorized machine-gun battalion could, from this point, cover the gap between the defensive front of the German XX Corps and the flank assault group of the I Corps which was moved in via Deutsch Eylau.

On 23 August the left flank of the XX Corps, north of Neidenburg, was attacked and because of a hostile envelopment during the night was compelled to withdraw to the northwest on 24 August.

The motorized machine-gun battalion, after being relieved by units of the I Corps, should now receive the mission to take

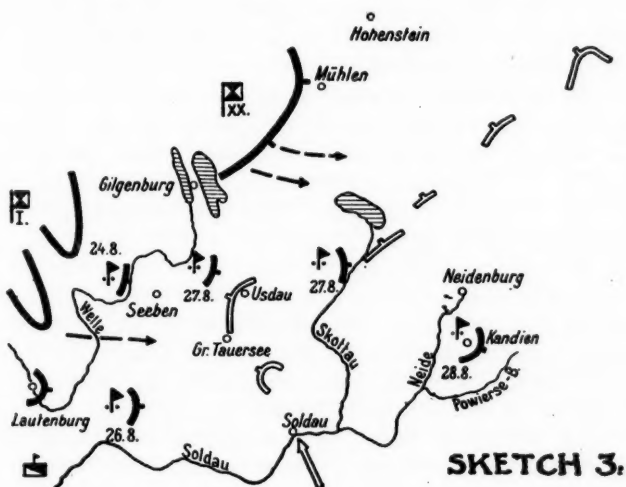
a position at Hohenstein on 24 August to stop or delay the hostile envelopment of the withdrawing east flank of the XX Corps. During the progress of the battle, the machine-gun battalion could be effectively used to protect the gaps that occur in the attack on the left or right flank of the corps. Its employment in the gap at the I Corps would serve best to provide support for the continued operation in the decisive direction toward Neidenburg.

### ATTACK, PENETRATION, AND ENVELOPMENT

How could a motorized machine-gun battalion have been employed on 24 August by the German I Corps?

It appeared that the Russian west flank was halted along the line: Gr. Tauersee—Usdau. Instead of the contemplated attack against this west flank, a frontal attack was made in the direction of the Welle sector.

The mission for the motorized machine-gun battalion could have been to cover the detraining and concentration of the I Corps. The Welle sector offers the best opportunity for this. It would have been impossible without some fighting to keep the crossings free for the contemplated attack on 26 August because of the advanced hostile position at Seeben.



The attack of the I Corps on 26 August lead over the hostile outpost positions to the main positions at Usdau and south thereof. Strong hostile cavalry was reported to be on the right flank between Strasburg and Soldau and the approach of more hostile forces via Mlawka toward Soldau had become known.

For this situation the motorized machine-gun battalion could have taken over the protection of the south flank of the corps early on 26 August, from a preparatory position at Lautenburg. The mopping up of the north bank of the Soldau sector southeast of Lautenburg during the day and its effective blocking off, would then have liberated the motorized battalion for some other mission.

On 27 August, with the main effort on the north flank, the corps was to capture the hostile main position at Usdau and then advance toward Neidenburg. A penetration was the only means left in order to make the envelopment of the hostile main forces possible. It was necessary that the strong enemy force protecting the hostile flank northwest of Soldau be contained there. For this purpose, the motorized machine-gun battalion could have supported a secondary attack against the hostile south flank from east of Lautenburg.

Toward noon the penetration of the north flank at Usdau was successful. It was considered advisable to continue this attack in an easterly direction toward Neidenburg, but the flank of this army had to be protected against the strong enemy forces northwest of Soldau.

The probability existed, however, that the motorized machine-gun battalion, because of its use on the southern flank against the hostile group at Soldau would not become available for other missions that day. Therefore, its use west of Usdau might have been more effective as it could have been better prepared to advance from here toward Neidenburg as soon as the high ground had been captured.

Thus it would have protected the I Corps which was pivoting against Soldau and covered the big gap which was created between the I Corps and the XX Corps.

Following the defeat of the enemy at Soldau on 28 August, the pursuit of the I Corps to Neidenburg started.

The motorized machine-gun battalion could have been moved immediately to the Neide sector south of Neidenburg in order to cover the main crossings. After constructing delay-

ing barriers along the Powierse-B Creek and the main roads leading to the south, the battalion then should become corps reserve at Neidenburg.

For this discussion the combat action of two forces were used with special missions in an annihilation battle. In the first situation it pertained to a corps which first had to protect an army flank 120 miles long.

In the second situation, an army corps was concentrated and moved forward for a decisive blow into the flank and rear of the enemy. The result has been that the following are believed to be the proper missions of motorized machine-gun battalions:

(1) To move from a central assembly area by a fast surprise move to occupy and hold terrain to be used as main features of the defense or for the attack.

(2) To attack and gain time for the preparation of defensive positions in rear, for the purpose of gaining superiority at another point, to screen an important shift of forces or to protect the flanks.

(3) To prepare and occupy positions in rear and to protect own retreating forces from hostile envelopment.

(4) To quickly occupy and hold dominating terrain features preparatory to an attack, thereby screening the assembling of the main forces.

(5) Since, in most cases, an attack in flank and rear of the enemy is preceded by a penetration of the hostile flank echelons, the motorized machine-gun battalion should cooperate in the penetration but be prepared for a quick displacement forward, either through the gap created or latterly for an envelopment or to defend against new hostile flank units.

(6) The protection and security of the area between the enveloping flank and the attacking forces contained at the front.

In all these cases the solution of independent combat missions were considered, ones in which contact with their own main forces did not always exist and in which support of other weapons seldom was given. This has shown the importance of organizing the machine-gun battalions with machine-gun companies as basic troops for reconnaissance and security detachments on motorcycles, with motorized antitank weapons and blockade construction troops. The multiple uses of the motorized machine-gun battalion could be seen from these discussions. Further tests could be made to determine if smaller but similar units, when used by the division, would save on forces



and material. In the motorization of the British army it will be noted that every motorized brigade has a motorized machine-gun battalion which would indicate that England has reached some conclusion as to the value of these battalions.

### Section 3

## DIRECTORY OF PERIODICALS

Included in this directory are only those periodicals from which articles have been selected.

See also, Section 7, "List of Periodicals Indexed and Key to Abbreviations."

### MILITARY AND NAVAL PERIODICALS

#### Joint Forces

Page

Army, Navy and Air Force Gazette (Great Britain).....	99
Fighting Forces (Great Britain).....	108
Journal of the Royal United Service Institution (Great Britain).....	110
Journal of the United Service Institution of India (Great Britain—India).....	110

#### General Military

Army Quarterly (Great Britain).....	100
Bulletin Belge des Sciences Militaires (Belgium).....	101
Canadian Defense Quarterly (Canada).....	107
Militärwissenschaftliche Mitteilungen (Austria).....	111
Militär-Wochenblatt (Germany).....	112
Revue Militaire Francaise (France).....	136
Revue Militaire Suisse (Switzerland).....	137
Wissen und Wehr (Germany).....	145

#### Arms and Services

##### AIR ARM

Revue de l'Armée de l'Air (France).....	129
Royal Air Force Quarterly (Great Britain).....	139

##### ARTILLERY

Coast Artillery Journal.....	108
Field Artillery Journal.....	108
Journal of the Royal Artillery (Great Britain).....	110
Revue d'Artillerie (France).....	130
Rivista di Artiglieria e Genio (Italy).....	138

##### CAVALRY

Cavalry Journal.....	107
Cavalry Journal (Great Britain).....	107
Revue de Cavalerie (France).....	130

##### CHEMICAL

Chemical Warfare Bulletin.....	107
--------------------------------	-----

<b>ENGINEERS</b>	
Military Engineer.....	127
Pioniere (Germany).....	128
Rivista di Artiglieria e Genio (Italy).....	138
Royal Engineers Journal (Great Britain).....	140
<b>INFANTRY</b>	
Infantry Journal.....	108
Revue d'Infanterie (France).....	131
<b>MEDICAL</b>	
Army Medical Bulletin.....	99
Journal of the Royal Army Medical Corps (Great Britain).....	109
Military Surgeon.....	127
<b>ORDNANCE</b>	
Army Ordnance.....	100
<b>QUARTERMASTER</b>	
Quartermaster Review.....	129
Royal Army Service Corps Quarterly (Great Britain).....	139
<b>SIGNALS</b>	
Signal Corps Bulletin.....	145
<b>TANKS</b>	
Sanct Christophorus (Germany).....	140
<b>VETERINARY</b>	
Veterinary Bulletin.....	145
<b>Navy and Marines</b>	
Marine Corps Gazette.....	110
Naval Institute Proceedings.....	128

#### Section 4

### CATALOG OF SELECTED PERIODICAL ARTICLES

This section catalogs the articles selected from Library periodicals for the current quarter. Periodicals in this Catalog are arranged alphabetically.

#### ARMY MEDICAL BULLETIN

April 1936

- (1) MEDICAL FIELD EQUIPMENT FOR THE AIR CORPS
- (2) TACTICAL STUDY: AN EFFECT OF MOTORIZATION ON MEDICAL TACTICS
- (3) ANNUAL REPORT OF THE SURGEON GENERAL

July 1936

- (4) THE MEDICAL CONTRIBUTION TO THE DEVELOPMENT OF BLIND FLYING. Major Myers
- (5) THE PHYSICAL EXAMINATION FOR ADMISSION TO THE UNITED STATES MILITARY ACADEMY: THE HEIGHT-WEIGHT TABLES. Major Cooley

#### ARMY, NAVY AND AIR FORCE GAZETTE (Great Britain)

16 April 1936

- (1) THE FUTURE OF ARTILLERY—A SPECULATION. Conway
- (2) THE MEMOIRS OF GENERAL FULLER. Captain Kennedy

23 April 1936

- (3) JELLCOE AND JUTLAND. (I) Sir Alexander Lawrence
- (4) THE VICISSITUDES OF A STRATEGIC MANOEUVRE. Major-General Rowan-Robinson

30 April 1936

- (5) JELLCOE AND JUTLAND. (II) Sir Alexander Lawrence
- (6) TAXATION, LOANS AND DEFENCE. Kitson

7 May 1936

- (7) THE HAIG OF DUFF COOPER. Captain Kennedy

14 May 1936

- (8) THE LAWS AND USAGES OF WAR ON LAND. Major Parkes
- (9) THREE INFANTRIES, NOT ONE INFANTRY. By L.V.S.B.

21 May 1936

- (10) MARSHAL PÉTAİN WANTS A MINISTRY OF DEFENCE. Major-General Rowan-Robinson

- (11) FOOD SUPPLY THE FIRST LINE OF DEFENCE. Lord Queenborough

28 May 1936

- (12) THE CO-ORDINATION OF DEFENCE. DEBATE ON SIR THOMAS INSKIP'S SALARY

4 June 1936

- (13) WAR RESERVE GRANARIES. Glover
- (14) STRENGTH OF THE NAVY. DEBATE ON THE SUPPLEMENTARY ESTIMATE

11 June 1936

- (15) OUR GAS DEFENCE CRISIS. Major Murphy
- (16) THE POLISH ARMY

18 June 1936

- (17) THE RAISING OF THE IRONSIDES. Colonel Beadon

25 June 1936

- (18) THE AIR WAR. Blacker
- (19) THE ROYAL AIR FORCE DISPLAY. Air Commodore Fellowes
- (20) ROYAL AIR FORCE EXPANSION. Hurford
- (21) LIGHTER THAN AIR IN 1936. de Moleyns
- (22) GLIDING. Flying Officer Dunworth

2 July 1936

- (23) AMERICAN DEFENCE POLICY. Walton
- (24) DISPLAY OF BRITISH AIRCRAFT. Captain Kennedy

9 July 1936

- (25) REORGANISATION OF THE CANADIAN MILITIA

16 July 1936

- (26) FOOD SUPPLY IN WAR TIME

ARMY ORDNANCE

March-April 1936

- (1) MILITARY SUPPLY. INDUSTRY SHOULD BE PREPARED FOR ITS WAR MISSION. Assistant Secretary of War Woodring
- (2) OIL AND OUR NATIONAL DEFENSE. II: PETROLEUM PRODUCTION AND SUPPLY. By the American Petroleum Institute Special Committee on Production and Supply
- (3) PREPAREDNESS. WE SHOULD FACE THE FUTURE WITH REALISTIC MINDS. Hotchkiss
- (4) ORDNANCE OF THE CONFEDERACY. (II) NOTES OF BRIGADIER GENERAL JOSIAH GORGAS, CHIEF OF ORDNANCE, C.S.A.
- (5) THE ITALIAN ARMY. THE FASCIST IDEAL OF ARMS AND STATE. Gentizon
- (6) NEW STANDARD 75-MM. ARTILLERY WEAPON
- (7) FIRST CAVALRY (MECHANIZED)
- (8) THE INFANTRY DIVISION ORDNANCE MAINTENANCE COMPANY. PART II: ORGANIZATION, FUNCTIONS AND OPERATIONS. Major Marsh

ARMY QUARTERLY (Great Britain)

July 1936

- (1) MILITARY PRIZE ESSAY, 1936. Lieut.-Colonel Burns
- (2) ALLENBY: AN APPRECIATION. Major-General Wavell
- (3) THE FRENCH OFFICIAL HISTORY: 1ST OF MAY, 1918—18TH OF JULY, 1918. THE CHEMIN DES DAMES
- (4) ITALY AND ABYSSINIA. Lieut.-Colonel de Watteville
- (5) TACTICAL DOCTRINE UP-TO-DATE: FIELD SERVICE REGULATIONS, PART II, 1935
- (6) THE AIR DOCTRINE OF CENTRAL SHOCK AND ITS EFFECT UPON SUPPLY. Major Stewart
- (7) THE DEARTH OF ARMY RECRUITS. Lieut.-Colonel Garwood
- (8) THE ORIGIN OF BRITISH LIGHT INFANTRY REGIMENTS. Major Edwards
- (9) MEMOIRS OF A FIGHTING MAN DURING THE INDIAN MUTINY, BEING EXTRACTS FROM THE DIARY OF THE LATE SERGEANT THOMAS ANDERSON, E TROOP, ROYAL HORSE ARTILLERY. Waine
- (10) THE GERMAN INFANTRY TRAINING MANUAL
- (11) THE LANDINGS AT GALLIPOLI IF CARRIED OUT TO-DAY. Captain Murphy
- (12) MODERNIZING O.T.C. TRAINING. Rowan-Robinson
- (13) AN ANALYSIS OF TACTICAL SURPRISE. By "Auspex"

**BULLETIN BELGE DES SCIENCES MILITAIRES (Belgium)**

By Captain Wendell G. Johnson, Infantry

**January 1936**

(1) DISCOURS PRONONCÉ, LE 5 DÉCEMBRE 1935, À VERVERIERS, PAR M. LE MINISTRE DE LA DÉFENSE NATIONALE, À L'INAUGURATION DU MÉMORIAL DU ROI ALBERT. [Speech by M. A. Deveze, Minister of National Defense, at the inauguration of the memorial to King Albert.]

An article praising the deceased King Albert for saving Belgium and preserving her independence. Giving full credit to Leopold I and II for the national defense plan, the construction of the fortification along the Meuse, the modernization of Antwerp, and the reorganization of the army, it nevertheless gives Albert the full honor and glory as the one determining factor in the winning of the war by delaying the German advance into France for a month and by blocking them, later, from the channel ports.

(2) LA DÉFENSE NATIONALE EN BELGIQUE DEPUIS 1830. [The Belgian national defense since 1830.] (III) Major Mersch

The Belgian national defense policy has for its objective the preserving of Belgian neutrality and the safeguarding of Belgian independence. The chief threat to this policy seems to be a Franco-German war, which probability is increasing more and more.

The Belgian army's components were set at the figure 100,000 in 1868. In 1870, during a test mobilization, it was found that due to the drain on the regular army by other components and also to the garrisoning of strong points, the force guarding the frontier and consequently preserving the neutrality of Belgium, was reduced from 70,000 to 40,000 men.

Consequently there was a reorganization in 1873. At that time military service was made compulsory; the army was organized in two army corps of two divisions with a regiment of cavalry per division; there was another division for garrisoning Antwerp; and there were two cavalry divisions. There were 240 pieces of artillery. The national reserve was to be composed of those veterans that had completed their years with the colors; this reserve was organized later between 1886-1889.

In 1887 it was decided to build fortifications in the Meuse Valley since the French had constructed the barrier fortresses of Verdun, Toul, Epinal, and Belfort; and the Germans had countered with Metz and Thionville.

(3) RENSEIGNEMENTS SUR LES MATÉRIELS D'ARTILLERIE ET LES MI. DE GRANDE PUISSANCE ISSUS DE LA GUERRE.—III: SYNTHÈSE DES PERFECTIONNEMENTS APPORTÉS AUX MATÉRIELS D'ARTILLERIE DEPUIS 1914-1918. [Artillery matériel and heavy machine guns descended from the War.—III: Improvements in artillery matériel since 1914-18.] (III) Major Colsoule

Third of a series of articles on the subject of artillery development. In this installment, Major Colsoule takes up the increase in range, increase in horizontal traverse, rapidity of fire, and motorized traction.

(4) LE SPORT MOTORISÉ EN ALLEMAGNE. [Motor sports in Germany.] (I) Lieutenant Dinjeart

The author introduces his discussion on the organization and instruction of motorized sport in Germany with remarks on the impulsion given by the government, the liaison between manufacturer and user, and the definitely military aspect of the cross-country events in which automobiles and motorcycles participate. In the current issue four of his seven short chapters are published. These deal with drivers, vehicles, motor sport schools, and instruction in cross-country motorcycle sport.

All civilian automobile and motorcycle drivers are invited to join one or another of the powerful semi-military or sporting organizations controlled by the government. The number of drivers' permits issued for sports competition is increasing year by year. In 1932, 166,000 permits were issued; in 1933, 204,000; in 1934, 228,500.

All army officers learn to drive automobiles and motorcycles during their courses in service schools.

Under the present regime, the automotive vehicles in use in Germany has increased rapidly as shown below:

Vehicles	1933	1934	1935
Motorcycles.....	896,000	983,994	1,053,556
Passenger cars.....	580,000	674,523	800,444
Trucks.....	174,169	191,715	241,384

The author lists the various types of vehicles participating in cross-country tests and the principal improvements that have been made to improve "all-terrain" mobility.

"Motorsportschulen" (motor sports schools) are found throughout the Reich, as are technical schools. Eight-week voluntary courses are continuous. In each session from 200 to 400 young men are enrolled. The instruction is severe and covers such topics as:

Theoretical and practical instruction in the automobile and motorcycle;

Driving exercises on roads and cross-country;

Maneuvering with vehicles;

Exercises in communication, orientation, maps, scouting, and reconnaissance;

Small arms firing;

Sport training.

Besides this means of training, the National Socialist Motor Corps (N.S.K.K.) has classes three evenings a week, and every Sunday there are all-day terrain events and exercises.

Cross-country motorcycle instructions follows, in general:

Courses over easy terrain with hard surface and no obstacles;

Courses over terrain strewn with a few obstacles;

Courses over difficult terrain.

A systematic and progressive course of training is outlined for the novice motorcyclist covering the method of conquering all sorts of terrain, obstacles, and conditions.

The final test for a certificate of sport motorcyclist includes a 31-mile run which must be completed in less than 85 minutes. This run comprises:

3.1 miles of dirt road;

9.3 miles in undergrowth;

2.0 miles across fields or wasteland;

3 hills of at least 25 degrees in woods;

2 dry ditches 3 feet deep and 13 feet wide;

110 yards along the bottom of a straight, sunken road;

An abrupt descent;

The remainder on paved road.

Communications, reconnaissance, and scouting by motorcycle are emphasized in all courses of instruction.

(5) LA MOTORISATION DANS LES ARMÉES. [Motorization in different armies.] General X\*\*\*

The author classifies divisions with respect to motorization as (a) partly motorized, (b) entirely motorized, and (c) armored forces on fast cross-country vehicles.

He feels that the first type, in which only supplies and munitions are motor transported, artillery remaining horse-drawn and infantry still on foot, will remain the most common and principal battle unit.

Wholly motorized divisions are those in which the infantry is transported in trucks, its heavy weapons hauled by tractors, and the artillery motorized or self-propelled. Such is the putative German division consisting of a reconnaissance group, squadron of 12 planes, 24 armored cars, 18 cross-country reconnaissance vehicles, a motorcycle battalion, a motorized battery, three infantry regiments, a battalion of 50 light tanks, and a regiment of artillery. Such a unit has more than 3,000 automobiles and about 400 motorcycles. In column its combat echelon is from 60 to 75 miles long.

The author esteems such a division to be difficult to manage, concludes that its movement would demand careful study, and says its deployment would be a delicate operation. Yet it has the unquestioned advantages of rapid movement on roads, utility as strategic reserve, infantry and artillery of equal mobility, and rapid displacement of artillery for continuous sup-



port of infantry. The author does not believe in the motorization of certain divisions but rather in the motorization at will of any divisions through the medium of a large reserve of trucks and tractors.

As for large armored forces, the author believes that they will be doomed to fail against a strong position. On the other hand, such a force would be excellent against a disorganized or weakly armed adversary, and as a covering force at the outset of war, or to stop an enveloping maneuver, and of course, to exploit a defeated enemy.

On the defensive, an armored force can play an important role by immediately counterattacking an enemy after he has pierced the front and is trying to advance over unknown terrain. Weakly-held lines, backed by a strong armored reserve, would be well insured against the enemy.

Employed skillfully at the right moment and over suitable terrain, an armored unit can repay in several hours the entire cost of its manufacture and time of training. But, used unwisely, such a unit can be annihilated. It cannot attack a strong front, particularly one of concrete fortification.

To meet, attack, and destroy an armored force, new weapons are necessary—ones rapid enough to find, and strong enough to destroy at one shot the heaviest tanks imaginable, because the latter will open the way for others. Such a weapon should be a fast, self-propelled, and partly armored gun of about 3½-inch caliber. It should have a muzzle velocity of about 2,000 feet per second, fire rapidly, and carry with it an initial ammunition supply.

These cannons would be as indispensable in the offensive as the defensive and should be organized as corps weapons (a group of three batteries of three or four pieces each, for example).

(6) LA MOBILISATION DE L'ARMÉE RUSSE SOVIÉTIQUE. [Mobilization of the Russian Soviet Army.] General Niessel

General Sikorski, formerly in the Polish Army, contends that the Soviet government could not mobilize more than 35 divisions on the Dnieper in two weeks, or more than 50 in one month. He gives the organization of the Russian Army as:

210 infantry regiments and over 100 unassigned battalions;

97 cavalry regiments and numerous separate squadrons;

1500 batteries of all types;

15 train regiments;

10 gas regiments and 40 independent gas battalions;

Numerous technical formations.

To these must be added 150,000 special political police and frontier guards, 60,000 prisoner guards, and 150,000 men of various formations.

These troops are not all of equal value. The troops of the territorial army are, in fact, only militia of little ability for an over-the-frontier war. Of the 70 infantry divisions only 29 are regular army.

The author concludes with comments on the Russian weakness in matériel and moral and political difficulties, all of which combine with the great distances to make the U.S.S.R. a country whose possibilities of intervention in a European conflict should not be exaggerated.

(7) DAS NACHTGEFECHT. [Night combat.] General Boltze

General Boltze's recent book on night combat is a training manual for small infantry units.

(8) A PROPOS DE LA DÉFENSIVE PASSIVE. [With reference to passive defense (against aircraft).]

Outlines of three informal talks on the passive measures of defense to be taken against hostile air invasion in France.

(9) LA DOCTRINE DES CHARS. [Tank doctrine.] General Baratier

There are some who believe the hope of tanks versus antitanks lies in heavier armor, but this would make tanks too heavy, slow, and costly. Others insist on lightness, speed, and quantity (possible from low cost). Although losses will be great, adequate quantity will balance this disadvantage. Still others say that the penetrating power of heavy automatic weapons will prevent light tanks from opening combat.

They admit that artillery cannot overcome all the concealed antitank guns, but they think that medium tanks, operating in successive waves (the

rear wave concealed by terrain cover, protecting the forward wave), will succeed, with the assistance of aviation, in destroying the antitank guns that escape artillery fire. Then, light tanks, immediately preceding infantry, will be able to clean up the terrain.

The last solution, concludes the author, is the one that seems to be adopted by the majority. It shows that the protection of artillery, together with aviation and tanks themselves, remains at the base of the doctrine on tank employment.

#### February 1936

(10) LA DÉFENSE NATIONALE EN BELGIQUE DEPUIS 1830. [Belgian national defense since 1830.] (IV) Major Mersch

Changes in Belgian Army between 1909 and 1918.

(11) LA PROTECTION FUTURE DES QUARTIERS-GÉNÉRAUX ET POSTES DE COMMANDEMENT. [Future protection of headquarters and command posts.] Captain Défrasne

During the World War, command posts were exposed to artillery fire, air attack, gas; and, in critical times, to unforeseen contact with the enemy, deep penetrations or raids made through intervals by mobile troops or armored vehicles. Since then, other factors have added to the danger:

- The improvement of artillery and large caliber automatic arms;
- Development of motorization and mechanization;
- Extension of sphere and intensity of aerial warfare;
- Possible use of terrorism as war measure.

To meet the threats to field headquarters and command posts, the author advocates:

- (a) Secrecy in locating, displacing, and reestablishing, command posts;
- (b) Careful selection of positions, flexible installations, and mobile organizations;
- (c) Passive measures of defense:
  - Against raids;
  - Against enemy artillery fire;
  - Against aviation;
  - Against gas and fire.
- (d) Active measures of defense:
  - By suitable arming of individuals;
  - Protection of important headquarters by the antiaircraft defensive measures of large units;
  - Action of organic security detachments armed, mounted, and organized for defending against ground and air dangers both in movement and in position.

Certainly after the effort expended in building high command groups—leaders and staffs—adequate means should be provided to guard them from destruction by the enemy; they are not readily replaced.

(12) RENSEIGNEMENTS SUR LES MATÉRIELS D'ARTILLERIE ET LES M. DE GRANDE PUISSANCE ISSUS DE LA GUERRE. [Artillery matériel and heavy machine guns descended from the War.] (IV) Major Colsouille

In his concluding article, Major Colsouille discusses carriages or bases, special weapons and instruments, projectiles and fuses, and artillery systems.

(13) LE SPORT MOTORISÉ EN ALLEMAGNE. [Motor sports in Germany.] (II) Lieutenant Dinjeart

This second and concluding study of motor sports in Germany enumerates the various trials or events that are celebrated during the summer and winter for automobiles and motorcycles which are open to army drivers or accredited members of the German motor clubs. In 1934, 18,000 drivers participated in 90 events as against 3,000 entries in 1933.

Among the events are: day and night cross-country tests; mountain trials; paper chases; fox hunts; endurance tests; tests on ice; winter course; balloon rally; identification tests by photo, etc.

One night orientation trial, for example, requires a 120-mile course to be covered in six hours by each participant, who must also find three control stations located on his map.

A night problem for a motorcycle company gives it a mission of finding three prisoners escaping on bicycles. The company is divided into teams

of four or five men, who leave successively every half hour beginning at 11:00 PM. After visiting three control stations, a team receives instructions at the last one leading them to the prisoners.

Grand national trials are held several times during the year. These are usually three-day tests covering from 500 to 700 miles over all conditions of roads, cross-country stretches, woods and slopes. Several hundred participants were entered in each in 1935.

(14) L'ARMÉE GRECQUE. [The Greek Army.] Lieutenant Argoutine

The Greek Army requires 18 months' active service, followed by first reserve until 40 years of age, and second reserve until 50. Greece could mobilize 500,000 in time of war. Her frontiers are contiguous with Bulgaria, Albania, Yugoslavia, and Turkey. Her total frontier, land and sea, is about 2,500 miles long.

(15) PRINCIPALES CARACTÉRISTIQUES DES CAMPAGNES COLONIALES. [Principal characteristics of colonial campaigns.]

Discussion of effects of distant theater, climate, terrain, absence of routes of communication, transport difficulties, character of enemy, and objective. The evolution of the mobile group of several infantry battalions, with attached artillery and other arms and services, is described along with its customary march formation and tactical employment. From this was developed the "mixed brigade."

(16) GRANDE-BRETAGNE: L'HYDRAVIATION AUX DERNIÈRES MANOEUVRES DE LA FLOTTE ANGLAISE. [Great Britain: Hydroaviation at the last maneuvers of the British fleet.]

Torpedo-carrying planes volplaned down to altitudes of 10 yards and discharged their missiles but the "Renown," thanks to its maneuvers, escaped three such attacks. Bombardment planes attacking by threes, dived from 3,000 to 300 yards, releasing each time over 200 pounds of bombs.

Artillery control by seaplanes was recognized as highly important. Many British officers concluded that bombing planes could well replace torpedo boats or submarines, although hydroplanes are still unable to act independently. Pursuit planes still retain the mission of combating hostile planes and protecting their own ships.

(17) L'AVIATION SANITAIRE DANS L'AFRIQUE DU NORD ET DANS LES TERRITOIRES SOUS MANDAT FRANCAIS DU LEVANT AU COURS DE L'ANNÉE 1934. [Medical aviation in North Africa and in French mandate territories of the Near-East in 1934.] Colonel Schickele

An interesting study of evacuation by air transport.

#### March 1936

(18) LA DÉFENSE NATIONALE EN BELGIQUE DEPUIS 1830. [Belgian national defense since 1830.] (V) Major Mersch

This last installment of Major Mersch's study covers the situation of today in Belgium's defensive scheme. It outlines the permanent establishment and system of fortifications on the eastern frontier, the army organization, reserve training, and industrial mobilization. The present strength of the Belgian Army is roughly 65,000 men.

(19) LE PLAN ALLEMAND DE L'ATTAQUE DE LIÈGE EN 1914. [The German plan for the attack of Liege in 1914.] Captain Gerard

We see the original v.Schlieffen plan and how v.Moltke retained the idea but complicated the scheme by reinforcing the German left in Alsace and Lorraine. He also abandoned the idea of having the extreme right move through Holland, and thus forced eleven corps (over 300,000 men) to go through the bottleneck between Liege and Aix-la-Chapelle.

The details and means for carrying out the plan are briefly enumerated and the missions assigned to the various elements of the attacking force are listed. The author then briefly relates the execution of the plan by the units directly involved. Several sketches illustrate the operation.

(20) LA PROTECTION DES AVANT-POSTES PAR L'ARTILLERIE. [Artillery protection of outguards.] Lieut.Colonel Vermaelen

The purpose of this study is to present the current outguard organization prescribed by Belgian regulations, study the weapons and munitions used, and guide the officers concerned in their mission.

(21) L'ARTILLERIE DANS LES CAMPAGNES COLONIALES. [Artillery in colonial campaigns.] (I) Colonel Jadot

The author takes up the problems involved in the employment of artillery in the Congo, especially with regard to difficulties of transport.

(22) MÉTHODES DE CHIFFREMENT. [Encoding methods.] Captain Falhaut  
A study of cryptography covering schemes of transposition and substitution, and also code dictionaries and cipher machines.

(23) BESANNAT ODER MOTORISIERT? GEDANKEN ÜBER ORGANISATION UND EINSATZ EINER KAMPFWAGEN-ABWEHR-KOMPAGNIE DES INFANTERIE-REGIMENTES. [Horse or motor power? Ideas on the organization and use of the antitank company of the infantry regiment.] Captain Westphal

The author studies the type of vehicles which best suits the antitank company, by discussing the different phases of combat in which it may be needed—on the march, offensive, defensive. He reaches the conclusion that an animal-drawn vehicle is preferable, but his line of reasoning is somewhat twisted to suit his opinions.

(24) LES DOTATIONS D'ARTILLERIE DANS LES ACTIONS OFFENSIVES DE 1914 À 1918. [The allotments of artillery in offensive actions from 1914 to 1918.]

A study of the evolution in artillery employment during the course of the World War, showing how the percentage of cannons to rifles changed and how the amount of preparation fire varied.

(25) PIONIERE UND INFANTERIE. [Engineers and infantry.]

A demand is made by German military periodicals for an engineer unit in the infantry battalion. Development of technical means and rapid action and the constant fear of armored attacks on flanks and rear are largely responsible for this desire. Division engineers cannot be expected to help build antitank obstacles for infantry battalions. Hence, each infantry regiment should have an engineer company organically assigned to it but technically trained under the division engineer officer. The Red Army uses this system.

(26) REVUE AÉRIENNE. BELGIQUE: LE "FAIREY KANGOUROU." [Air digest. Belgium: The "Fairey Kangaroo."]

The "Echo des Ailes," 22 January 1936, announces a single seater pursuit plane manufactured by the Avions Fairey Corporation. It is powered by an 860 horsepower Hispano Suiza. Its speed exceeds 220 miles per hour at 13,000 feet. It climbs to 16,000 feet in seven minutes, and to 19,000 feet in nine minutes. Its ceiling is 36,000 feet.

The pilot has four machine guns, two firing through the propeller and two mounted on the upper wing. It will carry a load of 1,250 pounds, which can be increased to over 1,800 pounds.

An interesting feature is the changeability from monoplace pursuit into biplace pursuit, or reconnaissance, or light bomber. In less than one hour the observer's place can be fitted with a seat, photography apparatus installed, another rear machine gun mounted, and 175 pounds of bombs put under the wings. It is then like the "Fairey Fox."

Night flying and blind flying equipment is provided, as is the radio set and heating of the pilots' cockpit.

(27) MOTORISATION ET MÉCANISATION. GRANDE BRETAGNE: CAMIONS À CHENILLES. [Motorization and mechanization. Great Britain: Trucks on tracks.]

Vickers Armstrong have constructed a series of heavy vehicles on four tracks for the British Army. Weight, 6.6 tons; maximum speed, 17 miles per hour; length, 21 feet; width, 7½ feet; height, 9 feet.

(28) STATISTIQUE VÉTÉNAIRE DE L'ARMÉE ALLEMANDE POUR L'ANNÉE 1932. [Veterinary statistics of the German Army for 1932.]

There were 32,833 horses and mules in the German Army in 1932: 16,136 in cavalry, 8,580 in artillery, 7,226 in infantry, and 3,891 miscellaneous. There were 644 war dogs and 3,820 carrier pigeons.

(29) L'ÉVACUATION DES PAYS BALTIQUES PAR LES ALLEMANDS. [The evacuation of the Baltic states by the Germans.] General Niessel

Germany clung to her hold on the Baltic states until well after the armistice. Finally she was forced to withdraw her troops and give up her

claims. General Niessel participated in the events connected with the German evacuation.

**CANADIAN DEFENCE QUARTERLY (Canada)**

**July 1936**

- (1) THE DEFENCE OF CANADA. Lieut.-Colonel Burns
- (2) FIELD SERVICE REGULATIONS, VOLS. II AND III, 1935
- (3) THE ORIGIN AND CAUSES OF WAR: I—THE BASIC BIOLOGIC ASPECT OF WAR; II—THE BIOLOGIC ORIGINS OF WAR AND THE CAUSES OF WAR; III—CONSCIENCE AND WAR
- (4) THE NEW NAVAL TREATY. Lieut. Commander Houghton
- (5) THE AMERICAN INVASION OF NOVA SCOTIA 1776-7. Kerr
- (6) THE MYSTERIOUS TREATY. By "An Observer"

**CAVALRY JOURNAL**

**May-June 1936**

- (1) THE 1936 MANEUVERS OF THE 1ST CAVALRY DIVISION. Captain Yale
- (2) 1ST CAVALRY DIVISION RAILHEAD AT MARFA, TEXAS, APRIL-MAY 1936. Lieut. Colonel Osmun
- (3) ORDINANCE FIELD SERVICE OPERATIONS DURING THE 1ST CAVALRY DIVISION MANEUVERS. Major Henry
- (4) MARCH OF 1ST CAVALRY BRIGADE TO AND FROM THE 1936 DIVISION MANEUVERS. Captain Thornburgh
- (5) MARCH OF 2D CAVALRY BRIGADE TO AND FROM THE 1936 DIVISION MANEUVERS. Major Hanson, Jr.
- (6) DISEASES AND INJURIES OF ANIMALS OF THE 7TH CAVALRY ON THE MARCHES AND DURING THE 1936 MANEUVERS OF THE 1ST CAVALRY DIVISION. Captain Bertz
- (7) USE OF COMPRESSED HAY CUBE COMPONENT OF THE FORAGE RATION. Major Kilburn
- (8) TACTICAL FORMATIONS FOR THE CAVALRY REGIMENT. Colonel Herr
- (9) PROPOSED TWO-WHEELED AMBULANCE TRAILER FOR VETERINARY CASES. Captain Nelson

**CAVALRY JOURNAL (Great Britain)**

**July 1936**

- (1) THE YEOMANRY AT GAZA. PART III (OCTOBER 27TH—NOVEMBER 6TH, 1917). Major Teichman
- (2) THE JAPANESE CONQUEST OF JEHOA, 1933. Major Sheppard
- (3) CAVALRY CONVERSIONS OLD AND NEW. Major Edwards
- (4) NAPOLEON'S EMPLOYMENT OF CAVALRY UNDER THE CONSULATE AND EMPIRE. By "Thistle"
- (5) LAKE AND VICTORY. Part V. Colonel Maunsell

**CHEMICAL WARFARE BULLETIN**

**April 1936**

- (1) MODERN METEOROLOGY. Captain Wenstrom
- (2) THE GAS ATTACK AT YPRES. A STUDY IN MILITARY HISTORY. (II) Dr. Hanslian
- (3) 301ST REGIMENTAL TRAINING, 1935. Lieut. Colonel McHatton
- (4) A CHEMICAL WARFARE LIBRARY

**July 1936**

- (5) SMOKE IN THE WORLD WAR. Major Hamilton
- (6) METEOROLOGY IN THE NEXT WAR. Captain Wenstrom
- (7) THE GAS ATTACK AT YPRES. A STUDY IN MILITARY HISTORY. (III) Dr. Hanslian
- (8) PROTECTION OF FOOD AND FORAGE. Major Hamby

## COAST ARTILLERY JOURNAL

May-June 1936

- (1) FIGHTING FOR OBSERVATION. Major Chennault
- (2) PROTECTION OF MARCHING COLUMNS
- (3) MODERN UMPIRING. Major Hones
- (4) IS PHILIPPINE NEUTRALITY PRACTICABLE? Major Newton
- (5) BOMBARDMENT OF THE HARTLEPOOLS. Captain Murley
- (6) TRAINING OF THE AA SEARCHLIGHT BATTERY. Captain Nicholson
- (7) A PRACTICAL IMPROVISED RADIO TRUCK. Lieutenant Keeler, Jr.
- (8) EMERGENCY METHODS OF FIRE CONTROL. Part V. Major Campbell
- (9) ORGANIZATION OF AA. MACHINE GUNS. Major Irvine
- (10) FORMS OF ATTACK AGAINST HARBOR DEFENSES. Major Hill

July-August 1936

- (11) THE INVASION AND CAPTURE OF THE BALTIC ISLANDS. Lieut. Colonel Green, and Captain Lanham
- (12) PREPARATION OF ANTI-AIRCRAFT ARTILLERY FIRE. Major Harris
- (13) ORGANIZATION OF AA REGIMENT. Major Irvine
- (14) GENERAL DOUHET'S DOCTRINE OF WAR. Lieut. Colonel Rousseau
- (15) THE RED ARMY. General Golovine
- (16) HARBOR DEFENSE. Colonel Cloke
- (17) ANTI-AIRCRAFT DEFENSE IN FRANCE
- (18) PUBLICITY AND THE SERVICE. Captain Reed

## FIELD ARTILLERY JOURNAL

May-June 1936

- (1) A METHOD OF CONDUCTING THE MARCH OF A BATTALION OF LIGHT ARTILLERY AS PART OF AN ADVANCE GUARD WHEN CONTACT IS IMMINENT. Lieut. Colonel Barker
- (2) AN EXPERIMENT IN SPECIALIZATION. Lieut. Colonel Lewis, & Corporal Parker
- (3) THE MAINTENANCE OF FIELD ARTILLERY MOTORIZED UNITS AND THE CONTROL OF ITS SUPPLY TRAINS. Major Allen
- (4) TEACHING CONDUCT OF FIRE, LATERAL. Captain Johnson
- (5) GUNPOWDER, GUNS, AND CIVILIZATION. Colonel Greer
- (6) THE LAST CHANCE—SECOND CAMPAIGN OF THE MARNE. Colonel Lanza

- (7) THE OLD ARMY LIFE. Lieut. Colonel Lull

July-August 1936

- (8) BURLAP AND FISH NET. Captain McGiffert
- (9) NEW LIGHT ON THE LITTLE BIG HORN
- (10) ARTILLERY NOTES ON THE MARFA MANEUVERS
- (11) DIESEL MOTORS AS POWER PLANTS IN ARMY VEHICLES. Lieutenant Timothy
- (12) THE TURN OF THE WORM—THE ALLIES IN THE SECOND MARNE CAMPAIGN. Colonel Lanza

## FIGHTING FORCES (Great Britain)

June 1936

- (1) THE NEW F.S.R.
- (2) THE BATTLE OF THE YALU. Lieut.-Colonel Burne
- (3) PHYSICAL TRAINING. (III) Commander Newcombe, R.N. (Retired)
- (4) GALLIPOLI AGAIN

## INFANTRY JOURNAL

May-June 1936

- (1) FIGHTING FOR OBSERVATION. Major Chennault
- (2) INTENSIVE TRAINING. Colonel Skinner
- (3) THE FOURTH BATTALION. Lieutenant Colonel Camp



- (4) MODERN UMPIRING. Major Hones
- (5) ACHTUNG TANKMINEN!!! Lieutenant Colonel Roberts
- (6) SCRIMMAGE. Colonel Fleet
- (7) TEACH THEM ON THE GROUND. Major Kenderdine
- (8) TRAINING FOR THE NEXT WAR. Corporal Denis
- (9) BATTLE OF PICARDY AND THE DOUBLE PENETRATION. Part II.  
Lieutenant Ehrgott
- (10) S I C. (Security—Information—Contact.) Colonel Lemly
- (11) THE SCORPION ATTACK. Colonel Wise
- (12) KITCHEN SOLDIERING. By "Centurion"
- (13) FIGHTERS MUST FIGHT. Gordon
- (14) MAY I PUBLISH THIS? By E.X. Novitiate
- (15) SING SOMETHING SIMPLE. Lieutenant Pierce
- (16) IS PHILIPPINE NEUTRALITY PRACTICABLE? Major Newton
- (17) TANKS TO ORDER. Captain W.G. Johnson
- (18) THE NEW ARMY GAME. Major Weems and Major Barker

**July-August 1936**

- (19) THE INVASION AND CAPTURE OF THE BALTIC ISLANDS. Lieut.  
Colonel Green, and Captain Lanham
- (20) DON'T KID THE SHOCK TROOPS. Major Skinner
- (21) THE RED ARMY. General Golovine
- (22) ARMY WIFE. Cary
- (23) SUB-CALIBER MANEUVERS. By a Coffee Cooler
- (24) THE APPRENTICE STRATEGIST. General Camon
- (25) LET'S HAVE A NEW DEAL IN UNIFORM. Lieutenant Dickson
- (26) WRITE IT UP FOR THE JOURNAL. Captain Greene
- (27) AND AN AMERICAN. Colonel Greer
- (28) THE INFANTRY AND THE MEDICAL DEPARTMENT IN WAR. Major  
General Croft
- (29) ANTITANK DEFENSE. Major von Schell
- (30) MINIATURE RANGES. Major Brokaw
- (31) AS THE TWIG IS BENT. Captain Guild

**JOURNAL OF THE ROYAL ARMY MEDICAL CORPS**

(Great Britain)

**May 1936**

- (1) REPORT ON A SERIES OF TESTS PERFORMED TO ASCERTAIN THE  
EFFICIENCY OF THE AMMONIA CHLORINE TREATMENT OF WATER APPLIED BY  
A STANDARDIZED METHOD. Major Mackenzie
- (2) TETANUS IN WARFARE AND THE CASE FOR ACTIVE IMMUNIZATION.  
Captain Sneath
- (3) THE DOCTOR'S WAR, 1899-1902. By D.A.D.M.S.
- (4) WAR EXPERIENCES OF A TERRITORIAL MEDICAL OFFICER. (I)  
Major-General Luce

**June 1936**

- (5) MEDICAL TACTICS IN MOBILE WARFARE. LECTURE I.—THE AD-  
VANCE. BEERSHEBA—GAZA—JERUSALEM. Lieut.-Colonel Layton
- (6) THE DOCTOR'S WAR, 1899-1902. By D.A.D.M.S.
- (7) CHRONIC DENTAL INFECTION AS A CAUSE OF INEFFICIENCY IN THE  
ARMY. Major Woods
- (8) WAR EXPERIENCES OF A TERRITORIAL MEDICAL OFFICER. (II)  
Major-General Luce

**July 1936**

- (9) MEDICAL TACTICS IN MOBILE WARFARE. LECTURE II.—LOCAL  
MOVEMENT. JERICHO—JORDAN—MOAB. Lieut.-Colonel Layton
- (10) THE USE OF ELASTIC ADHESIVE DRESSING (ELASTOPLAST) DURING  
ANNUAL TRAINING IN CAMP. Lieut.-Colonel Kinnear
- (11) WAR EXPERIENCES OF A TERRITORIAL MEDICAL OFFICER. (III)  
Major-General Luce



**JOURNAL OF THE ROYAL ARTILLERY (Great Britain)**

**July 1936**

- (1) THE ORGANIZATION OF COUNTER-BATTERY WORK IN MOBILE WARFARE BY A MEDIUM BRIGADE ALLOTTED TO A DIVISION. By "Anon"
- (2) RELATIONS BETWEEN THE GOVERNMENT, THE ARMED FORCES, AND INDUSTRY IN THE CO-ORDINATION OF THE NATIONAL WAR EFFORT. By "Amateur Economist"
- (3) ECHOES OF THE PAST. A SURGEON OF THE ROYAL ARTILLERY. By Major Teichman
- (4) TREATISE ON THE 6-IN. GUN. Major Nanson
- (5) THE FUTURE OF THE TERRITORIAL ARMY. Lieut.-Colonel Lyon
- (6) SOUVENIRS SUR FOCH. Colonel Grasset (Translated from the French)
- (7) "TIME SHRAPNEL IN A NUTSHELL." Lieut.-Colonel Fry
- (8) "GIVE US OUR OWN EYES," OR "YOU HAVE THE BEST STALLS—WE WANT THEM." By "Pancake"

**JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION**

(Great Britain)

**May 1936**

- (1) "THE EFFECT OF THE DEVELOPMENT OF AIR POWER ON BRITISH INTERESTS IN THE MEDITERRANEAN." [Gold Medal Essay (Air) 1935] Wing Commander Cochrane
- (2) CAN METHODS OF WARFARE BE RESTRICTED. Major-General Thuillier
- (3) THE SITUATION IN THE FAR EAST. Sir Frederick Whyte
- (4) THE INFLUENCE OF THE FIGHTING SERVICES IN JAPAN
- (5) THE LOWER DECK, PAST AND PRESENT. Part II. Rear-Admiral Somerville
- (6) STRATEGIC MOVEMENT OVER DAMAGED RAILWAYS IN 1914. Major Napier
- (7) AIRCRAFT ATTACKS OR GUNFIRE AGAINST WARSHIPS. Lieutenant-Commander Young
- (8) A JUNIOR SCHOOL OF TACTICS AND LEADERSHIP. Captain Mahony
- (9) THE REOCCUPATION OF THE RHINE ZONE
- (10) THE FRANCO-SOVIET PACT
- (11) THE ITALO-ABYSSINIAN WAR

**JOURNAL OF THE UNITED SERVICE INSTITUTION OF INDIA**

(Great Britain—India)

**April 1936**

- (1) APPRECIATION OF THE SITUATION AT THE OUTBREAK OF THE RUSSO-JAPANESE WAR. Colonel Kearsey
- (2) MOHFORCE SIGNALS IN THE NAHAKKI OPERATION, 18TH SEPTEMBER 1935. Captain Hall
- (3) IMPERIAL CABLE AND WIRELESS COMMUNICATIONS. Captain Wade
- (4) MINOR TACTICS TRAINING
- (5) WITH THE TIBET DETACHMENTS. By "Mugger"

**MARINE CORPS GAZETTE**

**May 1936**

- (1) THE ROLE OF THE MARINE CORPS SCHOOLS. Captain Mason
- (2) THE "MINUTE MEN" OF CANADA. Millen
- (3) PACK HOWITZER BATTERY IN LANDING ATTACK. Major LeGette
- (4) THE SEMI-AUTOMATIC RIFLEMAN. Lieutenant Johnson
- (5) AN INTRODUCTION TO THE GALLIPOLI CAMPAIGN. Part I (Continued) Captain Mason

**MILITARWISSENSCHAFTLICHE MITTEILUNGEN (Austria)**

By Major F. During, Infantry

**January 1936**

- (1) DER MINENKRIEG AM KRN 1917. [Mine warfare on the Krain, 1917.] Colonel Wolf-Schneider v.Arno

Between Flitsch and Tolmein, hence on the exact front of the great German-Austro-Hungarian breakthrough in October 1917, and in the middle of it, the Italian and Austro-Hungarian fronts ran within a few yards of each other across a depression connecting the Krain, 6,735 feet high, with an outlying peak of 6,498 feet. The depression was only 75 yards broad and with precipitous sides. After the capture of the Krain by Italian Alpine troops in May 1915, the line remained intact for two and one-half years. The only change during this time was that due to the masses of snow which, obliterating all, rose to a height of nine yards above the original positions. Fresh front lines were dug in this, and fresh wire put out, to which the enemy contributed. The narrowness of the depression prohibited any attempt on the part of the Austro-Hungarian troops to recapture the Krain. Warfare, if any, would have to take place underground. But, as the author points out, an attack by mining is a purely tactical action, and like all such, together with the quite special troubles of every kind necessary for its execution, is only justified precisely when a tactical end is thereby gained. The recapture of the Krain would have served no useful purpose, and the Corps and Division concerned are praised for not starting mine warfare. With the Italians it was another matter. A successful mining attack on the depression would have been for them a good start to their next attempt to break through on the Isonzo.

- (2) KAMPFWAGENTRUPPEN IM RAHMEN DER OPERATIONEN EINER ARMEE. [Employment of tanks with an army.] (II) Lieut.Colonel Michoux

This is the concluding instalment of an article previously listed in RML No. 61, page 102.

Colonel Michoux deals with (a) the role of the commander of the tank troops of an army in preparation for battle; (b) distribution of the tanks among the marching columns of army and corps; and (c) the conduct of a retreat.

- (3) ZUR FRAGE DER EINHEITSGESCHÜTZE. [The question of a unified gun.] Major General Rieder

The author discusses whether the light field gun and light field howitzer cannot be replaced by a single weapon, and concludes that, with the diminished comparative importance of shrapnel, a 90-mm. unified gun, firing also reduced charges, can replace both field guns and howitzers.

**February 1936**

- (4) DER RUSSISCH-POLNISCHE KRIEG 1919-1920. UNKRITISCHE UND KRITISCHE BETRACHTUNGEN. [The Russo-Polish War, 1919-1920. Non-critical and critical views.] (IV) Colonel v.Wittich (See abstract, page 51)

- (5) DER SANDKASTEN. [The sand table.] Major Swiatko

**March 1936**

- (6) DER RUSSISCH-POLNISCHE KRIEG 1919-1920. UNKRITISCHE UND KRITISCHE BETRACHTUNGEN. [The Russo-Polish War, 1919-1920. Non-critical and critical views.] (V) Colonel v.Wittich

An abstract of this concluding instalment will appear in the next issue of the Quarterly.

- (7) DIE SEESTRATEGISCHEN GEGENWARTFRAGEN IM MITTELMEER. [Present-day naval strategy in the Mediterranean.] Lieutenant Sokol

- (8) KAMPFWAGEN FÜR KLEINE STAATEN. [Tanks for small nations.] General Burstyn

# MILITAR-WOCHENBLATT (Germany)

By Major G. J. Braun, Infantry

11 March 1936

(1) EINE FRANZÖSISCHE MEINUNG ÜBER PANZERVERWENDUNG. [A French conception on employment of tanks.] General v.Eimannsberger

This article comments on Lieut.Colonel Perre's critique and review of the author's book, "The Tank War," taking up those points in which Perre differed in opinion from the author. General v.Eimannsberger states that warfare alone can be the crucial test and that the subject of tank warfare is still debatable. He also states that Perre's assumptions that tanks must be used as the battering rams for an attack or to accompany infantry are wrong and obsolete. He cites the British who have made great strides in the development of tank tactics as authority and also the statements of the French General Staff on the subject as well, inviting attention to the French organization of mechanized units to contradict Perre's contentions.

(2) GEDANKEN ZUM HANDSTREICH AUF LÜTTICH. [Views on the surprise attack on Liege.] Colonel v.Mantey, Retired

The Schlieffen plan called for an advance through Belgium, but since 1905 it became apparent that the advance must be made closer to Holland and that Liege must be captured to secure the rail facilities in order to make the plan feasible. In 1914, General Moltke hurried the advance on Liege making this move ahead of the planned schedule which had been set at 12 days after mobilization. This enabled the Germans to capture one fort within 7 days after M day, another M plus 10 days, two on M plus 11 and 12 days, and three on M plus 14 days.

General Ludendorff advocated a rapid surprise attack and crossed the border on M plus 3 days. All the troops were not ready but the advance started with the 14th Infantry Brigade and the 2d Battalion of the 4th Artillery, which were able to reach Liege. Ludendorff, who had taken command of the artillery when its commander was killed, immediately secured all bridges and when the troops arrived at Liege, immediately attacked the citadel, capturing it. The outlying forts were then subdued by artillery fire. The entire attack according to the author, was only possible because of the speed, daring and energy with which it was executed. It gave impetus and faith in Schlieffen's plan and permitted the invasion of France before the areas between the forts could be fortified.

(3) MASCHINENGEWEHRBEKÄMPFUNG IM ANGRIFF. [Combating automatic weapons in the attack.]

The author takes exception to General Reinicke's article, "Use of Antitank Weapons," which appeared in the 11 February 1936 issue of the "Militär-Wochenblatt." He states that the Reichswehr had long recognized the need of an infantry accompanying gun whose main mission would be the silencing of hostile machine guns. This gun was prohibited by the Versailles Treaty; therefore the animal-drawn, underslung light minenwerfer, which can be manhandled into the front lines, had been evolved. Although an infantry accompanying gun in the form of a low howitzer is desired, this would entail many difficulties which the author enumerates as follows:

(a) It would be erroneous to add artillery instruction to the already overcrowded training schedule of the short term soldier.

(b) The rifle company field train would be unduly increased, due to the great ammunition requirements of the weapon, and ammunition replenishment to the front line would be difficult.

(c) A self-propelled mount would require the service of a specialist driver, and the reserve supply of fuel would require additional space or vehicles in the field train.

Should the organization of a special company be contemplated, the author feels additional difficulties would develop. He recommends that the minenwerfer company be organized into 3 platoons of 4 light minenwerfers, and 1 platoon of 4 medium minenwerfers. This would provide one platoon of light minenwerfers per battalion in line, and the reserve platoon of

light minenwerfers, if necessary, to the battalion, making the main effort. These should be able to overcome the hostile machine guns that appear after the tank wave had passed on. The medium minenwerfers can be used against the more organized hostile machine gun positions.

(4) EINSATZ DER PANZERABWEHR-KOMPANIE ALS MARSCHSICHERUNG. [The employment of the antitank company for march security.] Captain Krüger

In this article, the author discusses the advantages and disadvantages of having the guns of the antitank company animal-drawn or motorized; he comments on the mission of this weapon when marching with the point of the infantry advance guard and its employment in protection of the column on the march. Although the animal-drawn gun is more adapted to the pace of the column, there is a great likelihood that upon a surprise attack by hostile armored vehicles, the animals would become panicky and so delay the unlimbering of the gun as to make its use impossible. The motorized guns with their escort could move to an advantageous position and take up a position under cover, and by moving forward by progressive bounds could furnish the protection desired. The author points out that during a maneuver he drove into a marching column with mechanized vehicles to find his advance blocked by vehicles halted crosswise on the road; then he was blocked off in rear and confronted by the antitank weapons on the flanks. He states that an alarm system similar to that used to warn against aircraft attacks allows time for the troops to clear the roads and seek cover and firing positions; this will also allow time for motorized antitank guns to open fire. The author favors the motorized self-propelled antitank (mounts) weapons for protection of columns on the march as well as for the attack and defense.

(5) MOTORISIERTE FESSELBALLONE. [Motorized capture balloons.] Lieutenant Feuchter, Retired

The captive balloon still remains an indispensable means of observation for the ground troops, especially for the registration of artillery fire. Great improvements have been made in these balloons to make them steadier in the air and to permit rapid changes of location. The new balloon is equipped with a detachable fuselage to replace the observer's basket during a displacement to another locality. This fuselage is equipped with a 60 horsepower motor, a rudder and elevator wings. The landing gear of wheels, skids, etc., complete the equipment. The balloon can travel under its own power at 25 to 30 miles per hour. The change from basket to fuselage requires from 6 to 9 minutes. France, Switzerland, and the United States have also developed types of motorized balloons for observation service. The author feels that the autogiro has been sufficiently perfected to perform almost as efficiently the duties of the motorized captive balloon, especially under conditions when the wind velocity exceeds 16 miles per hour.

(6) ITALIEN GEGEN ABESSINIEN. [Italy versus Abyssinia.] Colonel v.Xyländer, Retired

Continuing his series of articles on the Italian-Ethiopian War, the author devotes this instalment to the exploitation of the Italian victories in the Enderta region, resulting in the capture of Garagiam Heights and Amba Alagi Heights, which dominated the "Emperor's" road to the Lake Aschangi and Dessye.

#### 18 March 1936

(7) KAMPF UNTER PANZER. [Tank warfare.]

The author opens his article with the statement that military literature overestimates the capabilities of armored weapons. As a rule, the probable hostile counter-measures are given very little consideration. One British author, after estimating the capabilities of both the offensive and defensive, prophesies that the modern antitank weapons will soon immobilize armored vehicles just as machine guns have immobilized infantry. Contradicting Fuller, Liddell Hart, de Goulee, who are ardent advocates of mass employment of armored vehicles, the author quotes General Niessel and Major Poupel who favor the accompanying infantry theory. These two French officers base their views on actual experience in tank warfare.

They call attention to the inability of tank occupants to locate hostile targets by the sound of the firing guns. They also state that at best the vision of the tank occupants is limited in clear weather, and that machine guns firing against the slits cause so many sparks as to blind the observation of the occupants. They declare that smoke is of more assistance to the defender than to the tanks because the tank looms up bigger and quicker in the fog or smoke than does any defensive weapon which is camouflaged or hidden; therefore, the first and telling shot will be against the tank--not against the antitank gun. These two officers feel that accompanying infantry is necessary to warn the tanks of mine fields and targets, and to remove obstacles. The author states that the best method of combating tanks is to separate them from their accompanying infantry by machine gun fire, and when the tanks get close, open up on them with all weapons.

(8) ZUR NORDOST-OFFENSIVE IM SOMMER 1915. [The Northeast Offensive in 1915.] Major Kretzschmann, Retired

The author presents an excellent picture of the part played by railroads in the Campaign of 1915 on the Russian Front. He describes the use made by the Germans of the railroads for their concentration for the offensive on the north. Here the Germans captured Kowno and Wilna and drove through to Baronowitsche, while General Mackensen drove north from Sokal toward Kowel. This wide double envelopment cut off the vital railroad net supplying the Russian armies in the Warsaw salient.

(9) ITALIEN GEGEN ABESSINIEN. [Italy versus Abyssinia.] Colonel v. Xylander, Retired

In this instalment the author describes the capture of Amba Alagi, on 22 February, and the second battle in the Tembien region, 29 February, in which the Alpine troops were used to capture the Amba Nori heights dominating the pass. In the fighting in the Schiré area, 2 and 3 March, the Ethiopians managed to move within attacking distance under cover of fog and were not driven off until nightfall when they withdrew into the mountains. The fighting was severe, causing considerable losses to both sides.

(10) GEDANKEN ÜBER DIE GLIEDERUNG SELBSTÄNDIGER MG.-VERBÄNDE. [Views relative to the organization of independent machine-gun units.]

An article in which the author advocates a machine-gun battalion of heavy machine guns to be assigned to the higher command and used as the situation dictates, either to fill gaps, move to a threatened point, or for defense. This organization should be motorized and have some antitank guns and engineers as an integral part of the command. The antitank guns and engineers are included because most major attacks of the future will be supported by tanks and since these battalions are to cover gaps in lines, etc., they should have the protection necessary. The engineers are to erect obstacles, barriers and mine fields to strengthen the battalion position. The author feels that it is better that these weapons be assigned to the battalion in peace time to permit the commander and personnel to know the characteristics of the weapons and how best to coordinate their use. He recommends a machine-gun battalion of 4 companies, each having 4 guns per platoon, one antitank gun company and one engineer company. One platoon of super-heavy machine guns is desirable for antitank and antiaircraft service. He states that in the British machine-gun battalion one mechanized company has been added, versatile enough to provide march protection and combat reconnaissance. These seven armored cross-country scout cars are part of the battalion headquarters and trained in conjunction with the antitank company. The communications platoon must be equipped with radio.

(11) DIE TANKERFAHRUNGEN DES CHACOKRIEGES. [Tank experiences in the Chaco War.] Major Brandt, Retired

The author presents a vivid picture of the employment of tanks by the Bolivian Army. He offers some constructive criticism of the tanks which were used, as to their clearance, vision, motors and firing efficiency.

25 March 1936

(12) DIE MITWIRKUNG DER SEEMACHT BEI HEERESOPERATIONEN. [Naval cooperation with the Army.] (I) Vice Admiral Meurer, Retired (See Part II, 25 April 1936)

The author comments on the common idea that the navy merely assists the land operations by preparation, security, support, and supply of these operations. In his opinion this is erroneous for it is the combined operations of both that lead to the ultimate success. He divides the strategic elements of the naval participation in the combined operations into the following four major tasks, and comments on these in detail:

- (a) The domination of the sea lanes.
- (b) Determination of the defensive features of the hostile shores.
- (c) Determination of the possibilities of landing troops on these shores.
- (d) Organization of the operations and the harmonious command conditions.

(13) UNTERSCHIEDLICHE GRUNDSÄTZE FÜR DAS BEGEGNUNGSGEFECHT NACH DEUTSCHEN UND FRANZÖSISCHEN VORSCHRIFTEN. [Divergent principles for meeting engagements based on German and French regulations.] (See abstract, page 61)

(14) DIE MOTORISIERTER AUFKLÄRUNGSABTEILUNG GROSZER INFANTERIE-EINHEITEN. [Motorized reconnaissance detachments of large infantry units.] Major General Zolsz, Retired

The author advocates a motorized reconnaissance detachment which is so organized that it will be able tactically and technically to independently engage in combat 30 miles from the main forces and accomplish its mission. His idea of such an organization is as follows: Commander and an adjutant, 1 personnel truck, 1 light armored car, 1 motorcycle. A staff of 3 communications noncommissioned officers, 3 motorcycles. A communications detachment with 3 radio stations on motorcycles or automobiles. Also a communications patrol equipped with panels to communicate with the air service and equipment for visual light signalling on 2 motorcycles. One motorcycle platoon for reconnaissance and security. One tank platoon for road reconnaissance. One company of tanks for cross-country reconnaissance and maneuver. One motorized infantry company, equipped with heavy machine guns to exploit the tank successes. One platoon of light tanks as a breakthrough unit. One motorized light artillery platoon to support the reconnoitering detachment in battle and serve as antitank defense. One group of sappers and one chemical patrol for demolition, etc.

The author gives the missions of this detachment as the reconnaissance for higher units, rapid displacement to vital points, mobile reserve for higher units, screen for flanks, spontaneous pursuit, rear guard action, determination of the direction of approach of hostile units.

In carrying out its mission of reconnaissance the detachment must move with great speed to avoid destruction by superior numbers. It must determine the strength, flanks, and hostile intentions in addition to gaining a knowledge of the terrain between the hostile and friendly forces for the higher commander.

The speed will average about 8 miles per hour. The detachment's cooperation with the air service will allow the commander of the detachment more freedom in its use and economize on time. The author states the formation normally would be an advance guard of reconnaissance tanks and armored cars, which would precede the others about 3 miles, with motorcycle patrols on the flanking or parallel roads. The mission is not combat, but determination of hostile locations, strength and activity. The main force of the detachment would move in march column protected by reconnaissance tanks. Inter-communication would be by motorcyclists, light signals (rockets), radio and aircraft.

(15) LEITUNG VON FLUGZEUGEN DURCH FUNKTELEPHONIE. [Guiding aircraft by means of radio telephone.] Lieutenant Feuchter, Retired

An article commenting on the use of the radio-telephone by the British, whereby the ground observation stations can communicate with the aircraft on patrol duty. This development has been especially serviceable



in England where patrol planes must be in the air in order to intercept hostile invading planes. This is necessary because the time required to take the air after the warning is too great and would permit the invaders to reach the interior and accomplish their missions before interception. The radio-telephone has solved this difficulty permitting the planes to be in the air at convenient altitudes to carry out their missions.

(16) DIE FRANZÖSISCHE LUFTDIVISION 1918. [The French air division of 1918.]

An anonymous article commenting on the rapid development of military aviation in number of aircraft and the difficulty encountered as to their proper organization into larger units. Most countries, according to the author, have organized air brigades as their largest units. He recounts the existence of the French air division of 1918 and its use on the various battle sectors.

The author outlines the views of the French air advocate, Captain Etienne, of the functions and organization of an air division. He also comments on the Italian air service as to the number of brigade and division commanders. The author is of the opinion that air divisions should not operate independently but should be attached to armies for employment.

(17) ITALIEN GEGEN ABESSINIEN. [Italy versus Abyssinia.] Colonel v.Xylander, Retired

In this article Colonel v.Xylander reviews the activities on the northern front between February 1936 which led to the capture of Amba Alagi and Lake Aschangi.

#### 4 April 1936

(18) MOTORISIERTE SCHÜTZEN. [Motorized infantry.] Major Spannenkrebs

The motorized infantry of the new army must not be mistaken for the infantry which is temporarily conveyed by army transportation. The former is organically equipped with cross-country traversing vehicles. They detruck for combat and are used in the following manner:

(a) When supporting weapons, such as artillery, engineers, antitank and communications are attached, the motorized infantry, as a rule, is organized into brigades or light divisions. All motorcycle infantrymen are included in the former. The missions are similar to those of the cavalry except that they can move faster and farther with less fatigue.

(b) When used with other units they become parts of tank divisions, etc., and here the tanks have the major attack missions and the motorized infantry brigades that of support, to occupy vital points unoccupied by the enemy, exploiting a tank success, etc.

The author describes the French cavalry division which has one motorized and two horse brigades, the former being divided into armored cars and motorized infantry (dragons portés). This division in turn differs from the "motor mechanical" divisions in which armored vehicles predominate.

The principal advantage of the motorized infantry unit lies in its great march speed, being capable of covering 150-160 miles per day and arriving fresh at their destination. The disadvantage is that the columns are road bound and lack the cross-country maneuverability of horse cavalry.

The author discusses the types of vehicles that are used for transportation of motorized infantry calling attention to their shortcomings. He also takes up the questions of protecting them with armor, then increasing their maneuverability by use of track-laying vehicles and their protection while on the march. These features in turn represent more weight, reduction of speed, greater expenditures of fuel and therefore additional burdens on the supply service.

The author also comments on the protection of the motorized infantry while on the march and after detrucking. For this he advocates the use of mechanized antitank weapons capable of firing from their vehicle mounts. One platoon antitank weapons per battalion of motorized infantry is his solution.

(19) DAS PROBLEM DER GESCHWINDIGKEIT IN DER NEUZEITLICHEN KRIEGFÜHRUNG. [The problem of speed in modern tactics.]



Speed has not only revolutionized strategy and tactics on land and in the air, but it has also changed war politics. The author states that the time elapsing between the declaration of war and the opening of hostilities will be cut to a minimum. Some foreign military politicians and soldiers are of the opinion that a declaration of war will be dispensed with in the future and a surprise attack by air will open the hostilities by striking the principal cities and industrial centers before their defense can be organized. The author comments on the development of the motor and the resultant advances in rates of speed of land and aircraft and the effect of this potential speed on strategy and tactics.

(20) HABEN WIR BEIM EINTRITT IN DAS GEFECHT NOCH EINE EINHEITSGRUPPE? [Does the combat team still exist when the attack begins?]

The author discusses the usual occurrence in combat that units seldom are able to enter the attack with all their personnel. Much of the personnel is frittered away by detaching men as connecting files, flank patrols, etc., when serving in the advance guard, for example. He covers the problem in detail and offers suggestions to remedy this evil.

(21) UM DIE TANKSCHLACHT VON CAMBRAI. [The tank attack at Cambrai.] Lieut. Colonel Christern

Colonel Christern endeavors to remind his readers that antitank defense by troops not equipped with antitank weapons is hopeless even though there are heroic examples of the disabling of tanks by men firing through the vision slits, and other methods. He mentions the British tank attack at Cambrai as an example of complete defeat of a force not equipped to combat this weapon. This victory was unexploited because its great success came as a surprise for the British who were unprepared to follow it up. The author in turn reminds the reader of the failure of the British tank attack at Flesquières where the Germans met them with camouflaged antitank defense weapons.

(22) ITALIEN GEGEN ABESSINIEN. [Italy versus Abyssinia.] Colonel v. Xylander, Retired

In this article the author discusses the British forces in Africa, the Italian service of supply, and the recent operations on the northern front.

#### 11 April 1936

(23) GENERALFELDMARSCHALL FRHR. V.D. GOLTZ. [Field Marshal Count von der Goltz.]

The anonymous author reviews the life and writings of Field Marshal von der Goltz, touching on his desire to study the causes of the various defeats to German arms. The author also comments at some length on von der Goltz's service with Turkey and as inspector of fortifications of Germany. His writings were prophetic in many respects, as shown by the various references. This article was written for the twentieth anniversary of his death, on 19 April 1916.

(24) GEFÄHRLICHES EXPERIMENT. [The dangerous experiment.] General Noskoff, Russian Army

The author describes the incident of the change of command from the Grand Duke to General Alexejew during the critical period of September 1915. He comments on the indecision and lack of responsibility of the General Staff to meet the new crisis created by the German Tenth Army in its advance toward Vilna. The lengthy interchange of letters and telegrams between the Grand Duke, General Alexejew and the Emperor caused a great loss of valuable time and opportunity. The author states that this failure to reinforce the Russian forces in the gap between Vilna and Duna-burg, lost the Vilna battle for them.

(25) MASCHINENGEWEHRBEKÄMPFUNG IM ANGRIFF. [Combating machine guns in the attack.]

This article describes the present machine gun set-up of the German battalion as 39 machine guns, light and heavy, per battalion. When the machine guns of the machine-gun battalion and the special reconnaissance detachment are added, there are approximately 50 machine guns for 1,000 to 2,000 yards of frontage, or one machine gun per 20 to 40 yards. The author shows how machine guns in counter-fire can only keep down the fire of hostile machine guns and not destroy the guns, and that those machine

guns on the defensive can better accomplish this than those of the offensive. He also states that in open warfare less artillery support can be expected than in trench warfare. Since only two-thirds of the machine guns were silenced or destroyed by the great artillery barrages and preparatory firing in 1918 it can be seen that in open warfare a greater per cent will be left capable of firing on the advancing infantry. To permit the infantry to advance, the author recommends an infantry gun company of light minenwerfers per regiment carried on armored track-laying carriers.

(26) ARTILLERIE IN DER VORHUT ODER NICHT! [Shall there be artillery in the advance guard?]

The author is of the opinion that, in a meeting engagement, the commander who attacks immediately with good artillery support has the better chance to win. He is doubtful if modern infantry is sufficiently equipped with heavy weapons to be successful in an attack if compelled to rely on its own armament. He believes that it lacks sufficient heavy high trajectory weapons, also that when the minenwerfer is fired in the open without cover it is not as effective as the light field howitzer. He calls attention to the difficulty of ammunition supply and observation which must be considered when the firing is in the open without cover.

The artillery observer as a rule is located farther in the rear and can sufficiently observe the entire sector to warn units of any surprise flank attacks, or in case the infantry suddenly gets into a position where it cannot advance or retreat, the artillery by firing smoke can assist its efforts. The foregoing is quite a contrast to the limited observation of the minenwerfer observer who is well up in front and can see but a narrow sector of that front.

The author feels that artillery should be kept well forward with the advance guard because the tendency is to steadily increase the distance between the advance guard and the main body, due to the threat from hostile low-flying planes. According to the author it would also be very advantageous that a battery be entirely oriented when the artillery of the main body arrives.

(27) DIE ITALIENISCHE LUFTWAFFE IM KRIEGE GEGEN ABESSINIEN. [Italian air force in the Abyssinian War.]

The author states that the Italians had 300 planes in Eritrea and Somaliland at the outset of the war, namely, 3 reconnaissance groups of 10 squadrons, 1 naval reconnaissance squadron, 2 pursuit groups of 6 squadrons, and 6 bombing groups of 12 squadrons. The airdromes were increased from 3 to 9 and the emergency landing fields from 10 to 26. The author comments on the following technical difficulties which were encountered and which delayed the beginning of hostilities: due to the high altitude and thin air, compressors had to be installed on the motors, the wood portions of the planes had to be replaced by steel, the water-cooling system had to be replaced by air-cooling system, due to the sand carried in the air, etc.

The vision of striking terror into the hearts of the natives by the use of European military technique, bombing, etc., did not materialize. Instead of strategic bombing far in the interior, the bombing of Adua and Gorahai were close-in affairs of a tactical nature to assist the ground forces. The air force served not only as the eyes for the tanks and infantry columns which they supported, but they would fire on any enemy when he appeared. The Italian air force located and dispersed hostile concentrations by bombing and machine-gun fire. In November the Italians started their distant reconnaissance flights which resulted in the location and destruction of columns advancing toward key points, the destruction of supply depots and the disruption of lines of communication.

The Italian air corps carried on no independent missions but worked in close cooperation with the ground forces to which they were attached. During the inclement weather which hindered supply, they dropped ammunition, food and water to their outlying and advanced forces. It was also used to disseminate propaganda against the Ethiopian government. The author states that the air force did not demoralize the Ethiopian troops by their bombs and machine-gun fire, but the bombing of dumps caused losses of food supplies and munitions.

On various occasions the Ethiopians decoyed Italian planes to attack encampments in valleys and then delivered machine-gun fire on the planes from the adjacent high points, inflicting considerable damage. Incendiary bombs and poison gas bombs were employed by the Italians in retaliation for the decapitation of some of their captured aviators.

18 April 1936

(28) UBERRASCHUNG. [Surprise.]

The keynote of this article is that surprise is the first step to success. The author endeavors to show that the characteristic of combat is the uncertainty of every new situation and that it requires a flexible mind to cope with every change. The best planned and ordered enterprise might fail if not supervised; also the best trained soldier will continually encounter unforeseen difficulties. The lack of attention to these difficulties may be the source of surprise. The author feels that to be surprised exposes the surprised party to grave dangers, panic and even defeat. The questions foremost in the minds of commanders should be "how can I surprise the enemy in this situation," and "can he surprise me in this situation"? Reconnaissance and a study of terrain is the best preventative against surprise. The best method of surprise is the sudden burst of well-aimed rifle and machine-gun fire. Concealment and fire discipline, and avoidance of premature opening of fire are essential aids to surprise.

(29) LUFTWAFFE UND SEESTREITKRÄFTE. [The air arm and naval forces.] Colonel Nagel, Retired

In this article the author invites attention to the strained relations between England and Italy during the past year, and the political role played by potential possibilities of Italy's great air armada in the event of a naval war. According to the French, mere possession of good air force supported by coastal and land bases has as great a moral effect and influence on international political situations as was formerly attributed to great navies. Although aviation plus naval forces cannot conquer a hostile country, they can curtail the enemy's freedom of action by severing his land, sea, and air communications. In spite of the great technical development of aviation, the opinion still exists that the fleet domination cannot be supplanted by the air force. The author describes the effect of various weight bombs released from varying altitudes on naval craft of the "Nelson" class and others. He also discusses the munition supply difficulties for aircraft used against naval craft, both based from land and sea. The author comments on the anti-aircraft protection weapons of the warships of Great Britain, United States, Italy and France, their bases, geographic problems, etc.

(30) ITALIEN GEGEN ABESSINIEN. [Italy versus Abyssinia.] Colonel v. Xylander, Retired

In this article the author ably reviews the strength of the Italian forces in officers, noncommissioned officers, enlisted men and reserves, plus its armament in general. He also comments on the operations of the Italian forces in the vicinity of Gondar and in the Hausa region during March 1936.

(31) KAMPFWAGENABWEHR! [Antitank defense.] General Reinicke

The author opens his article with the statement that the antitank company of the infantry regiment possesses nine guns which are to stop and break down a tank attack. He further states that it is desired to employ them as units and avoid attaching them to battalions. The division antitank detachment possesses 27 guns to protect the division front. Here also the principle of employment by units prevails and it is suggested that they go into position well to the front. The author offers his opinions as to the most logical location and method of employment of the antitank units, stressing the fact that early engagement of hostile tanks is desired.

(32) GEDANKEN ÜBER DIE VERBESSERUNG DER ENGLISCHEN WEHR-MACHT. [Ideas relative to the improvement of the British Army.]

The author covers the ideas of General Spears and Liddell Hart on the reorganization and modernization of the British Army.

(33) ZUR ARTILLERIEGLIEDERUNG. [Artillery organization.]

This article is devoted to the old controversy of artillery support for infantry in combat in which the author takes exception to General v.Eimannsberger's statements which were published in previous "Wochenblatts."

(34) DIE NACHRICHTENMITTEL UND DER RUNDfunk IM CHACOKRIEGE. [Communications equipment and the radio in the Chaco War.] Brandt

The author discusses the limited equipment and personnel possessed by both of the contending forces in the Chaco War. He comments on the inability to use pigeons due to predatory birds and states that Paraguay possessed the key to the Bolivian code for the greatest portion of the war. Telephone and telegraph lines had to be placed along the paths laboriously cut through the forest.

(35) DIE ANDERUNGEN DER MILITÄRSTRAFGERICHTSORDNUNG UND DER DISZIPLINARSTRAFORDNUNG. [The changes in the Courtmartial Manual and Disciplinary Regulations.] v.Lepel

25 April 1936

(36) GENERALOBERST V.SEECKT. [General v.Seeckt.]

A well deserved eulogy of General v.Seeckt's life, written 22 April at the time of his 70th birthday anniversary. Coming from an old army family, the son of the former commanding general of the V Corps, he entered the service in 1885 with the Kaiser-Alexander-Guard-Grenadier Regiment. Early in his career he attended the German War College and thereafter served on various general staff duties. At the beginning of the World War he was Chief of Staff of the III Corps under General v.Lochow, and later became Chief of Staff of Mackensen's Army on the Russian Front. In June 1915 he was promoted to Major General and was assigned the delicate post of Chief of Staff of the Turkish Army in Constantinople. In June 1920 he became Chief of Staff of the new German Army, and by his diligence and personality soon rounded this organization into an army equal and superior to that of the old German Army. So well was this task done that the neighboring countries and the Communists of Germany clamored for his relief. The inter-allied commission forced his removal because he permitted the former Crown Prince to observe the maneuvers, but the work was so well organized that it carried on after he left.

(37) DIE MITWIRKUNG DER SEEMACHT BEI HEERESOPERATIONEN. [Naval cooperation with the Army.] (II) Vice Admiral Meurer, Retired

Continuation of an article which appeared in the 25 March 1936 "Militär-Wochenblatt." In Part I of the present article the author cites and describes as historical examples the landing of the French and British at Sebastopol during the Crimean War, and the attempt of the Italians to land forces on the Dalmatian island Lissa during the Austro-Italian War of 1866. Both of these are given as examples of how not to carry on landing operations. In Part II the author briefly describes the excellently coordinated landing operations of the Japanese in the Russo-Japanese War, 1904-1905, at Liatung and Port Arthur. These the author cites as excellent examples of how the navy should cooperate in landing operations. In Part III the author states that in the short period of ten years the lessons gained from the Japanese operations were apparently forgotten. The Allies failed to take advantage of the opportunity to force the Dardanelles in the early part of the war when the Turks were weak and unprepared. This opportunity for a great strategic move and the shortest way to victory was lost by starting the enterprise as a diversion. Again friction with Allies, home government and even between army and navy brought on failure. This enterprise was one of the most stunning blows to the British Navy, costing them 76,000 tons of naval craft sunk, 100,000 men out of a force of 250,000 engaged, killed or wounded and the loss of 20 large transports and two munition ships. Lack of surprise, preparation and cooperation spelled failure for the enterprise from the outset. Part IV is devoted to comments on the capture and landing operations of the German forces on the Baltic Islands in the fall of 1917. These landing operations were well coordinated and demonstrated excellent cooperation between the

army and navy. Although it was more in the nature of a diversion than a strategic operation, and against a poorly organized enemy, the execution is a lesson worthy of study. The author also covers the landing operations of February 1918 when the German forces assisted in the liberation of Finland.

The author recommends the study of the unsuccessful as well as the successful landing operations to better acquaint the student of military science of proper cooperation of naval forces with land operations.

(38) BEWEGLICHE KRÄFTE IM LEEREN RAUM? [Mobile forces in unoccupied areas.]

According to the author, nearly all current military literature advocates the rapid occupation of unoccupied areas to deny the roads to enemy columns, occupy gaps, or penetrate far into the exposed hostile flank by mobile forces. Sometimes their missions are to attack or to hold and in that manner decisively influence the operations. Similarly, the defense of these unoccupied areas can be visualized by mobile units or barrier units.

The author reminds us that these views existed before the World War, as was demonstrated by the employment of cavalry on the Western Front in 1914, only to be shattered by finding the border closed by a counter defense. Every renewed attempt met a counter move. He wonders if the motorized and mechanized units with their speed and fire-power will be able to make visions and hopes materialize in the future war. Large modern armies are very vulnerable during their period of mobilization and concentration. The sudden increase in supplies and munitions requires a perfectly coordinated nation. To prevent sudden raids over the border into the homeland, a covering army must be created from the border units, augmented by infantry cannon, mine laying units, and barrier detachments. These in turn must be supported by the older men of the reserve forming an "Armee de Couverture." The author feels that since the border zone is most concerned with this initial threat of invasions, it should be responsible for the organization of the defense to prevent an invasion. This is being done by most European nations at present; therefore the theoretical unoccupied areas will not exist in future wars.

(39) NOCHMAL GROSSTANKS UND IHRE ABWEHR. [Super tanks and defense against them.]

This article covers the type and caliber of the antitank guns available for use against super tanks. The author is of the opinion that the modern 100-mm. cannon and the 88-mm. antiaircraft guns are the only weapons suitable for this task. Both of these must be provided since the old 100,000-man army was prohibited to have them. The cost of the procurement of these weapons may be great but the author feels that there is nothing so costly as a war that has been lost. The armor of the super tanks may increase in the future to 100-mm. thickness which will require a weapon of at least 75-mm. caliber with greater muzzle velocity than the present gun.

(40) AUSBILDUNGSGRUNDSÄTZE FÜR DIE MASCHINENPISTOLE. [Basic training for the sub-machine gun.] Lieutenant Eckardt, Retired

(41) ITALIEN GEGEN ABESSINIEN. [Italy versus Abyssinia.]

The author first describes the difficult terrain and supply transport problems of the Italian forces and their ultimate capture of Lake Ashangi on 4 April 1936; next he describes the strategic pursuit of the Ethiopian forces by the Italian "fast columns" of the Eritrean Army Corps. Despite the victories of the Italian forces, there has been a continuous stream of replacements from Italy. He also comments on the road construction work to assist the supply service.

It is of interest to note that the author states that Marshal Pordaglio, piloting his own plane, reconnoitered the terrain prior to issuing his orders for the advance.

(42) EISENBAHN-WELTBÄUEN ZWISCHEN SOWJETRUSSLAND UND JAPAN. [Railroad construction race between Soviet Russia and Japan.]

Japan, Manchukuo, India, Siam, Mongolia, Turkestan, and Russia in Siberia are daily news items in the world newspapers. Millions of people inhabit the countries bordering the Pacific. Australia, although fifteen times the size of Germany, has but seven million inhabitants. The imagination can

visualize the empire that could be developed there if Japan acquired it. Japan's power has been steadily ascending since 1904-1905, but it has one opponent which it must eventually meet in order to survive, and that is Soviet Russia.

The sale of the Eastern Chinese Railroad and its resultant loss of influence in Manchuria was a great blow to Soviet Russia and has revived the Far East controversy. Vladivostok with its provinces is now threatened. For the past years Soviet Russia has exerted great effort to make secure its provinces in the Far East and to expand into inner Asia. Bolshevism failed in China, otherwise the die would have been cast long ago by Russia for a show down with Japan.

To counter Japan's Manchurian success, Russia has feverishly labored to create a self-sustaining Far East industrial province as a base to maintain its outpost army (Blücher) in that part of the hemisphere. Much of this preparation has been secretly conducted and the news of the construction of the double strategic rail net to offset Japanese aggression has been given very little publicity. The frontal attack is directed toward Mongolia, whereas the left flank of the Russian railroad endeavors to envelop Manchuria from the north.

Five railroad lines lead into Mongolia. Here the Russians are double-tracking the spurs leading off the Siberian railroad to the south; for example: from Orenburg—Taschkent (1283 miles); from Novosiberisk—Ilsk (1764 miles). The railroads entering Mongolia consist of spurs coming from: Semipalatinsk—Uliatsutai (approximately 1240 miles); Sergopol—Chuguchak (approximately 248 miles); Ilisk—Djarkenkuldje (approximately 280 miles). There is also under construction a spur from Verhneudinsk to Urga, the capital of Mongolia.

Reliable Japanese sources state that the Russians have completed 1116 miles of the Baikal—Amur railroad, which, with its adjacent spurs, will be completed this year. This northerly rail line is to replace the lost Manchurian railroads. It branches off to the north at Taishot from the Siberian railroad going to the north of Lake Baikal and follows parallel to the Amur River to Chinda where it divides into a spur to Nikolajewsk, another to Komsomolsk from which three spurs go south, to Charbarowsk, to Birakan and to Tastimiguda. These provide the cross communication behind the front in the direction of northern Manchuria.

Komsomolsk will be a name worth remembering because it has been developed from an obscure village to a city of 80,000 inhabitants and it is hoped that its population will reach 500,000 at the end of the second five-year plan. A regular air line has been established between Moscow and Vladivostok. The Far East program of Soviet Russia is said to be:

(a) A system of strategic communication from the east coast to the west coast of North Sachalin, in Kamtchatka and in the autonomous republic of Birobidjan forming a wedge on the Manchurian border.

(b) The deepening of the Amur River, which is the boundary between Russia and Manchuria, thereby facilitating river traffic and relieving the Far Eastern railroads. Other Far Eastern rivers are to be similarly deepened.

(c) Modernization of the harbors of Vladivostok—Nikolajewsk and other vital ports to accommodate larger ships and improve the loading and unloading facilities.

(d) Construction of river steamers and wharves.

Strategically, Japan sees the opportunity to use Mongolia for a base to drive forward toward Tschita in order to cut the Siberian railroad in case of war. This would sever Marshal Blücher's line of communications to northeastern Siberia. Soviet Russia is also endeavoring to improve her position in Eastern Turkestan (Sinkiang). The Trans-Caspian Railroad leads directly to the border of Chinese Turkestan which province is entirely under Soviet influence. The fur monopoly of Chinese Turkestan is entirely controlled by Soviet Russia and most of the important military and civil positions are occupied by Soviet "advisors." The construction of a railroad spur to connect Urmtschi and the Turkestan—Siberian Railroad is contemplated, and a motor road leading thereto is now being constructed by convict labor. Great Britain also has commercial interests in Sinkiang.



The recent Japanese railroad construction projects in Manchuria are better known, having received considerable publicity. The newly created harbor of Raschin has been connected with the Jenki—Hsokine line which is a short cut between Japan proper and the capital of Manchuria (750 miles). Raschin (Roshin) is located at the northeast tip of Korea and was developed from an obscure fishing village to a world harbor of 30,000 inhabitants, having a permanent military headquarters and modern railroad station located there. Additional millions have been appropriated by Japan for harbor improvements. Despite this the Russians appear determined to retain Vladivostok.

4 May 1936

(43) DIE ARTILLERIEBEKÄMPFUNG BEIM ANGRIFF. [Combating artillery during the attack.] Lieut. General Marx, Retired

This article contains a discussion as to the proper type and caliber of field piece to be used in counterbattery firing to silence or destroy hostile artillery during an infantry attack. The author, an artilleryman of war repute, calls attention to the artillery phase of the attack to assist the infantry when tanks are involved. He believes that the rapid firing 75-mm. field pieces can perform this duty more efficiently than the heavy caliber weapons, such as heavy field howitzers. There has been a tendency since the World War to assign heavy field howitzers to this task. He believes that when tanks leave the infantry behind because of their greater speed they deprive their infantry of partial artillery support because the artillery fire must be raised or stopped to avoid hitting the tanks when they enter that zone.

(44) GEDANKEN ÜBER AUFKLÄRUNG MIT PANZERSPÄHWAGEN. [Reconnaissance with armored scout cars.] Lieutenant Hagen

An article in which the author discusses the suitability of the present German armored scout car for reconnaissance missions. He believes it unsuited for these missions because it lacks cross-country maneuverability necessitating delays in clearing road blocks and barricades. He recommends the multiple wheel (similar to the Christie tank), or wheel caterpillar vehicles. He also suggests an armored personnel transport vehicle.

(45) GETRENNT AUSBILDEN—VEREINT KÄMPFEN. [Segregated for training—united for combat.]

In this article the author comments on the problem facing the German Army in its present military expansion. Modern armament of armies has steadily increased the number of new weapons requiring specialist training in technique. This training must necessarily be intensive due to the short period permitted by the enlistment of the soldier. He explains the necessity of segregated training of these specialists by units, and their ultimate attachment as auxiliary or assisting weapons to make up the well rounded, and coordinated combat team or unit for the training of combined arms and combat. He refers to the antitank, antiaircraft, engineer, communication and similar services.

(46) ITALIEN GEGEN ABESSINIEN. [Italy versus Abyssinia.] Colonel v. Xylander, Retired

The author comments on the Italian organization (troops) in the first section of this article, and in the second he covers the advance of the Northern Army in the difficult mountainous terrain of the northern front in April. Due to the lack of adjacent roads and poor condition of the Emperor's Road, truck and wagon supply was impossible until these roads were either built or repaired. In order to permit the unimpaired advance of the 18,000 troops and 9,000 animals, supplies were carried by pack animals or dropped by parachutes from airplanes. One hundred twenty tons were supplied by parachute. Galla tribesmen, the hereditary enemies of the Amharic followers of the Ethiopian emperor, had been recruited into the Italian service and assisted this advance. In the third section of the article the author comments on the activities of the Southern Army in Somaliland up to the battle of Giancobo.

(47) SOWJETRUSSISCHE ANSCHAUUNGEN ÜBER NEUZEITLICHEN LUFTKAMPF. [Soviet ideas of modern air combat.]



The author states that without question Soviet Russia at present possesses the greatest air fleet in the world. He comments on General Lawrow's (former Soviet air advisor to Czechoslovakia) ideas on modern aviation. According to the General, the greatest strides have been made in speed at 12,000 to 15,000 feet altitudes and the climbing power of aircraft. This speed increase has developed a technical difficulty which is now being solved, namely that of synchronization of machine guns with the new speed. The aim is to reach 18,000 to 21,000 feet as air combat altitude. New bombs with greater dispersion for use in aerial combat against formations and hostile bombers have been developed.

Strategically, he believes that the bulk of the air force should have as its objective the dispersion and destruction of the hostile bombing aviation. This can best be carried out against airdromes and air bases. If aerial combat is necessary for this mission, then attack on the bombers should be conducted over enemy territory and as a last resort, over friendly territory.

#### 11 May 1936

(48) WEHRPROPAGANDA IN DER WEHRMACHT. [Military propaganda in the Army.] Captain Loibl

The author stresses the great need of military propaganda to prepare Germany and the young recruits for their military obligations. After 17 years respite from this type of national instruction, authorities realize they must educate the country to realize the full extent of their military obligation and sacrifices necessary in the event of war. The author feels that this propaganda is especially needed within the Army itself to prepare the soldier mentally and morally with a desire to sacrifice himself for his country's sake should the occasion call for it. The best trained machine gunner of peace time is useless unless he possesses this spirit. The author closes with the statement, "Germany must survive in order that we can survive," therefore a great amount of military propaganda is necessary to the population but even more is necessary within the Army.

(49) GEDANKEN ZUR KAMPFWAGENABWEHR IN DER VERTEIDIGUNG UND IM HINHALTENDEN WIDERSTAND. [Antitank defense in defense and delaying action.] Braun

The tank has limited the distance of the outposts from the main line of resistance to about 500 to 800 yards, which is the limit of the protection which can be rendered by the antitank weapons located behind this line. The author believes that since the primary function of the antitank gun is to prevent a breakthrough of the main line of resistance, it would seldom assist the outposts. It would be best, he says, to keep them silent and camouflaged behind the main line of resistance and open fire suddenly with deadly effect as was the practice with the heavy machine guns during the late war. The antitank weapons with the front-line units have the mission to prevent a penetration of it; whereas the antitank weapons of the division and corps have as their mission the prevention of a breakthrough. For the former he advocates the use of the antitank rifle which can be operated and carried by one man. This would augment the 37-mm. gun of the front-line troops and would make it possible for the outpost area to extend beyond the 500-800 yard range. The antitank defense should be organized in pairs, where the tank danger is greatest, and located behind mines. The antitank rifle eliminates the tank and the light machine gun or sub-machine gun engages the accompanying infantry.

(50) DIE LEIBESÜBUNGEN IN DER WEHRMACHT. [Physical training in the Army.]

(51) DAS ENGLISCHE MILITÄRREGIME IN AGYPTEN ALS KERNPUNKT DES ANGLO-ÄGYPTISCHEN PROBLEMS.—SEINE ENTWICKLUNG SEIT 1919. [The British military regime in Egypt as the nucleus of the Anglo-Egyptian problems. Its development since 1919.] Major Welsch, Retired

The author chronologically discusses the various Anglo-Egyptian conferences where efforts were made to arrive at some agreement as to the type or nature of British military regime to be maintained in Egypt. In 1921, while under British occupation, it was classified as a protectorate. In 1922, England declared Egypt as an independent sovereign state with

four excepting points, namely, the protection of the British lines of communication within Egypt; the defense of the Realm from within and without; the protection of minorities and foreigners; and the unrestricted occupation of the Sudan. In 1924 Zaghlul Pascha, the Egyptian premier in conference with MacDonald, categorically demanded the withdrawal of the British forces in Egypt. This involved the Suez Canal, which although internationalized, is still considered under British control because the entire defense strategy of the British Empire is built around the control of the Canal. In 1927 the question was revived in a 7-months conference between Sir Austin Chamberlain and Servat Pascha, but resulted in the same final demand of the withdrawal of British forces from Egyptian territory. In the 1929 and 1930 conferences, the Egyptians insisted on the internationalization of the Suez Canal without special privileges to Great Britain, and the withdrawal of the British Army as soon as the Egyptian Army had reached the strength and technical means to insure the protection of the land.

The establishment of air bases for commercial and military aviation has added to the complications. The Anglo-Italian differences over the Ethiopian occupation, with the resultant fleet and garrison reinforcements, has again brought forth opposition and demands from Egypt.

(52) ITALIEN GEGEN ABESSINIEN. [Italy versus Abyssinia.] Colonel v. Xylander, Retired

In this article the author discusses the activities of General Graziani's Army in the south. He covers the situation in western Somaliland and the opening engagements with Ras Nasibu. The advance on Sassabaneh and its capture is described by the author, who also states that the battle of Gianagobo was not an Italian victory. Here on 15-17 April 1936, after 60 hours of hard fighting, the Ethiopians withdrew without further molestation from the Italians. This battle was the beginning of the major offensive in the south.

#### 18 May 1936

(53) DIE OPERATIVE ROLLE DER DEUTSCHEN WESTFESTUNGEN IM JAHRE 1914. [The operative role of the German western fortresses in 1914.] Major General Klingbeil

After the War of 1870-71, Germany followed France's example and established a system of fortifications on its western frontier. This indicated Germany's anticipation of a future two-front operation. The author describes the system of fortifications on the German left flank in the vicinity of Metz—Diedenhofen and the von der Goltz plan of luring the French Army to attack between Metz and Strassburg whereby the Germans could fall upon the French flanks and annihilate them. This did not materialize, and the main effort was made on the German right flank, using the left flank as a secondary front. In the Nancy-Epinal operations the Germans made the error of using one-third of the total strength of the Western Front, thus depriving the right flank, which was the location of the decisive operations, of essential man-power. The fortress system was originally to be used to cover the concentration of the German forces for an offensive or as supporting locations in case of a withdrawal. The holding of this line of fortifications with the minimum strength to liberate forces for the decisive operations was the predominant idea.

(54) WEGE ODER IRREWEGE DER PANZERABWEHR? [Correct or incorrect methods of antitank defense.]

Statements have appeared occasionally in periodicals stating that it is erroneous to develop a special counter weapon against every new weapon that appears, for example, tank and antitank weapons. These writers feel that it is faulty to burden the infantry with the antitank defense which deprives it of the opportunity to carry out its infantry missions. Some state that the counter for the new weapon should come from the weapon itself; that is, tanks should overcome tanks.

The tank has ceased being a special threat, having become a general threat. It has become part of the normal attack to employ tanks to open the way for the advancing infantry; therefore the defender possessing a

strong antitank defense not only hits a severe blow to the tanks but also to the infantry which is thus deprived of their support.

To those who argue that it is best to employ tanks against tanks as the best defense, the author replies that tanks should never be frittered away. They constitute the most powerful attack weapon and should be concentrated at decisive locations where a deep breakthrough is desired. The rest of the wide front must get along without tanks in the meantime. Tanks should only be utilized as a last resort as a defensive weapon against tanks. The author recalls that in 1914 the German cavalry was dispersed and frittered away over a wide front and asks if this error should be repeated by the modern cavalry, the tanks. The opponent who retains the freedom of mobility of his attacking weapons at decisive locations must so arrange his remaining forces as to enable them to defend themselves by their own strength.

The statement that the present tank defense is inadequate can be analyzed as follows: A German infantry regiment in defense covers approximately 2 miles frontage against which 300 tanks are employed in an attack. The 9 antitank guns of the regiment plus one-third of the division antitank detachment weapons make a total of 18 antitank weapons. Thus each gun is opposed by approximately 4 minutes to fire 24 rounds. Should they register 25% hits, this would account for 6 tanks each, which would permit 9 tanks per gun to survive.

The author then comments on the assistance of the engineers in construction of barriers, traps, mine fields, etc., the effect of artillery fire, the tank rifle and heavy machine guns of the front-line units. Throughout his article, the author emphasizes that the tank is not a special threat nor is the antitank gun a special weapon, but that both are normal equipment in modern warfare and that tanks are not normally employed against tanks. He states that it is essential that the infantry be equipped with antitank weapons since more than ever the artillery must be protected.

(55) FLUGZEUGBEWAFFNUNG. [Aircraft armament.] Lieutenant Feuchter, Retired

(56) DIE DURCHBRUCHSSCHLACHT VON NEUVE CHAPELLE 1915. [The breakthrough offensive at Neuve Chapelle, 1915.]

The author comments on the typically British sportsmanlike account of the feat and courage of a German Jäger battalion which, in March 1915, had held up, practically unaided, from early morning till dusk, 48 British battalions that formed the battering ram for the contemplated British breakthrough. This occurred after the Germans had greatly depleted their forces on that front to provide troops and weapons for their Russian offensive. The British intelligence service was fully aware of this condition, and the General Staff prepared a breakthrough offensive which they felt was sure to sweep aside all resistance. After heavy artillery preparation the initial phase succeeded with the expected ease, but toward nightfall an astonishing paralysis crept over the whole movement. The British commanders had halted the advance to widen the breach when they found the flanks were meeting some resistance. They permitted 10,000 men to squeeze into the narrow space where they milled about without maneuver space. This was caused by the British devotion to parade-ground alignment on the battlefield, the old obsession for filling every gap in the line no matter what the conditions. This hesitation permitted the German battalion commander to move his meager battalion into the gap to oppose the British advance. The battalion, by its daring move, took advantage of the British indecisions and delays and was able to take up a commanding position and gain time until reinforcements arrived from Lille, and the crisis for the Germans was past. The 11th Jäger Battalion had held up 48 British battalions.

(57) ABSCHLUSS DES KRIEGES IN ABESSINIEN. [End of the war in Abyssinia.] Colonel v. Xylander, Retired

The author describes the battle and capture of Sassabaneh on 29 April 1936, in which the Southern Italian Army encountered many difficulties, such as terrain, weather, and water supplies. The author also describes the final advance on Addis Ababa.

(58) DAS "STAATSVERTEIDIGUNGSGESETZ" DER TSCHECHOSLOWAKEI.  
[The national defense law of Czechoslovakia.]

(59) MILITÄRISCH-TECHNISCHE AUSBILDUNG IM ENGLISCHEN HEER.  
[Military and technical training in the British Army.]

An outline of the educational institutions attended by the officers of the Royal Engineers and the Royal Corps of Signals. He describes the studies at the Military College of Science in Woolwich and the School of Signals at Catterick. These are augmented by excellent courses at the Royal Military Academy and Cambridge University.

## **MILITARY ENGINEER**

### **May-June 1936**

- (1) AERIAL PHOTOGRAPHY ON TROPICAL SURVEYS. Birdseye
- (2) CAPE COD CANAL BRIDGES. Spofford
- (3) ATLANTIC-GULF SHIP CANAL. Lieut.Colonel Somervell
- (4) HARBOR ON THE WORLD WAR. Lieut.Colonel Hall
- (5) THE NEW MOTOR EQUIPMENT OF THE COMBAT ENGINEER REGIMENT.  
Captain Reinhardt
- (6) MUSKINGUM RIVER FLOOD CONTROL. First Lieutenant Purcell
- (7) FIELD DEVELOPMENTS IN AERIAL MAPPING. First Lieutenant Weyher
- (8) STRATEGIC MINERAL SUPPLIES. 7. PLATINUM. Major Roush

### **July-August 1936**

- (9) THE BOMBING OF MAUNA LOA, 1935. Jagger
- (10) THE PORT OF MIAMI, FLORIDA. Peyton
- (11) DIVISIONAL ENGINEERS IN THE ADVANCE. Major Scott
- (12) THE FORT MONROE SEAWALL. Lieut.Colonel Young
- (13) DEMOLITION TESTS IN THE TENNESSEE VALLEY. Captain Linkswiler
- (14) THE COLLAPSE OF COLLECTIVE SECURITY. (Editorial)
- (15) NATIONAL DEFENSE IN CANADA. Major Dorrance
- (16) STRATEGIC MINERAL SUPPLIES. 7. PLATINUM. Major Roush
- (17) THE COAST ARTILLERY SCHOOL. Colonel Gardner
- (18) A BATTLEGROUND OF THE AGES. Commander Searles, U.S. Navy
- (19) "REICHSARBEITSDIENST." Lieutenant Thompson

## **MILITARY SURGEON**

### **May 1936**

- (1) FIELD CHLORINATION OF WATER. Major Fox
- (2) MOSQUITOES OF FORT DUPONT, DELAWARE. Major Cairns
- (3) THE MEDICAL RESERVE CORPS. Major Friedlaender

### **July 1936**

- (4) LEGISLATION AFFECTING THE MEDICAL DEPARTMENT. Major General Reynolds
- (5) THE TREATMENT OF WAR WOUNDS. Colonel Lewis
- (6) THE MANAGEMENT OF THYROID DISEASES IN THE SOLDIER. Lieut. Colonel Mastin
- (7) THE DIVISION LABORATORY SECTION. Lieutenant Hertert
- (8) TYPHOID IN THE C.C.C. Lieut.Colonel Lull
- (9) POLIOMYELITIS IN THE PHILIPPINE ISLANDS. Lieut.Colonel Hillman

### **August 1936**

- (10) THE INFANTRY AND THE MEDICAL DEPARTMENT IN WAR. Major General Croft
- (11) PLASTIC SURGERY IN RELATION TO THE ARMED FORCES; PAST, PRESENT AND FUTURE. Captain Johnson, U.S. Navy
- (12) CARE OF THE WAR DISABLED PRIOR TO THE WORLD WAR. Major Moxness
- (13) WHY CARLISLE? Major Bleckwenn

# NAVAL INSTITUTE PROCEEDINGS

## May 1936

- (1) PRESSURES AGAINST PEACE. (First Honorable Mention, 1936) Lieut. Commander Strong, U.S. Naval Reserve
- (2) IMPRESSIONS OF DUTY WITH THE CCC. Ensign Toner, U.S. Naval Reserve
- (3) JUTLAND FROM S.M.S. B110. Rheydt

## June 1936

- (4) SEA POWER IN THE AMERICAN REVOLUTION. (Honorable Mention, 1936) Lieutenant Eller
- (5) BOOK-LEARNIN' LEADERSHIP. Lieutenant McCracken
- (6) FLEET NAVAL RESERVE VS. RETIREMENT. Lieutenant Frost
- (7) THE "VINCENNES," WORLD TRAVELER OF THE OLD NAVY. Bolander
- (8) SEARCHLIGHT BARRAGE IN NIGHT LANDINGS. Captain Jessop

## July 1936

- (9) COURAGE IS NOT ENOUGH. (Honorable Mention, 1936) Lieutenant Eller
- (10) MORE THOUGHTS ON SELECTION. Lieutenant Wenger
- (11) FITNESS REPORTS AND SELECTION. Lieutenant Holtwick, Jr.
- (12) THE CASE OF CAPTAIN LAWRENCE. Post
- (13) SPECIALISTS OF THE GREAT LAKES. Lieutenant Commander Wunch, Jr.
- (14) JAPANESE MERCHANT MARINE HISTORY. Lieutenant McCormick

## August 1936

- (15) WATCHFUL GIDEON. West
- (16) PICNIC WITH CUSHING. Lieutenant Commander Howell
- (17) SELECTION AND MORALE. Commander Craven
- (18) SELECTION BY MERIT. Lieutenant Commander Lothrop
- (19) THREE SIMPLE NAVIGATIONAL NOMOGRAMS. Grummann
- (20) WHY GUAM ALONE IS AMERICAN. Lieutenant Nelson
- (21) THE NAVY MATERIAL INSPECTION SERVICE. Lieutenant Commander Manning
- (22) SAN JUAN DE ULUA UNDER THE AMERICAN FLAG. Captain McMillen

## PIONIERE (Germany)

By Major F. Doring, Infantry

### February 1936

- (1) MOTORISIERUNG UND SPERRUNGEN. [Motorization and blocking operations.] Colonel Dennerlein

In this article the author discusses only the defensive side of this subject and only to the extent that the defensive is to be carried out, wholly or in part, by the engineers.

- (2) MOTORISIERUNG UND MECHANISIERUNG DER ENGLISCHEN PIONIERE. [Motorization and mechanization of the engineers in the British Army.] Major Rothardt

- (3) BEISPIELE FÜR DIE VERWENDUNG MOTORISierter PIONIERE. [Examples of the employment of motorized engineers.] Captain Meltzer

The author tries to show the importance of tasks which may befall motorized engineers and also the limitations imposed by their present equipment.

- (4) DIE DEUTSCHE LANDESBESTÄTIGUNG BEI AUSBRUCH DES WELT-KRIEGES. [Germany's fortification at the beginning of the World War.] Major Dinter

This article deals only with land fortresses. Major Dinter gives first the history of permanent fortifications in Germany from the beginning of the nineteenth century, after which he deals with the type and armament of the western frontier, eastern frontier and inland fortresses, which are classified into five classes, according to the power of resistance.

## QUARTERMASTER REVIEW

May-June 1936

- (1) MAINTAINING THE MOTOR TRANSPORT OF A FIELD ARMY. Lieutenant Colonel Mills
- (2) MESS ECONOMY. Lieutenant Colonel Shuman
- (3) HISTORY OF THE HAWAII NATIONAL GUARD. Lieutenant Warfield
- (4) WHERE DO WE GO FROM HERE? Major Conrad
- (5) GUIDE FOR SALES OFFICERS, U.S.A. (II) Major Porter, and Wilson
- (6) THE QUARTERMASTER STOREHOUSE OF KNOWLEDGE. Problem III

July-August 1936

- (7) BEHIND THE BAGDAD FRONT. Fletcher
- (8) ORIGIN AND FUNCTION OF THE QUARTERMASTER CORPS. Major Rowan
- (9) HISTORY OF THE HAWAII NATIONAL GUARD. Lieutenant Warfield
- (10) THE QUARTERMASTER STOREHOUSE OF KNOWLEDGE. Problem IV

## REVUE DE L'ARMÉE DE L'AIR (France)

By Lieutenant Colonel C. H. Wash, Air Corps

January 1936

- (1) LA MACHINE À FINIR LA GUERRE. [The machine to end war.] Captain Matignon

A further criticism of Douhet's Aerial Army, "the machine to end war." The author does not set forth the technical objections to the Douhet doctrine. He does attack the school of thought which in its continued search for "a machine to end war" has seized upon the airplane as its latest tool for this purpose.

- (2) L'INTERPRÉTATION DU PAYSAGE AU SERVICE DE L'OBSERVATION AÉRIENNE. [Interpretation of terrain by aerial observation.]

- (3) PHYSIOLOGIE ET PRATIQUE DU PARACHUTISME. [Physiology and the practice of parachute jumping.]

Two studies by Russian authors on the medical effects of parachute jumping, are united in this article. It is principally of interest for the illustrations of organized parachute jumping in Russia with particular reference to "the vertical envelopment" practiced during the Soviet maneuvers in the Ukraine in 1935. It seems rather futile to write articles on the evil effects of parachute jumping when the remedy is so obvious.

February 1936

- (4) LA DOCTRINE OFFICIELLE DE L'AVIATION MILITAIRE FRANÇAISE. [The official doctrine of French military aviation.] Captain Etienne

This article is a discussion of the official doctrine of French military aviation with respect to the principle of homogeneity of matériel. It appears that four different aviation authorities are not in agreement on this subject.

- (5) LE BOMBARDEMENT DES NAVIRES. [Bombardment of ships of war.] Lieutenant Aussenac

The author discusses the technical difficulties of aerial bombardment against moving targets at sea and the complications of the problem resulting from anti-aircraft fire.

- (6) DÉTERMINATION DE LA POSITION D'UN AVION DANS L'ESPACE À UN MOMENT DONNÉ.—MESURE DES VITESSES. [Determination of the position of an airplane in space at a given moment.—Measurement of speeds.] Captain Vauzou

This is the first of a series of technical articles on the subject announced. It is concerned principally with instruments and methods used at Test Centre at Cazaux in the study of bombing ballistics, tables of fire, etc.

- (7) NOTES ET SOUVENIRS SUR LA CRÉATION DE L'AVIATION MILITAIRE FRANÇAISE. [Memories of the early days of French military aviation.] Lieut. Colonel Bellenger

- (8) LES ILLUSIONS D'UNE RÉPARTITION NOUVELLE DES MATIÈRES PREMIÈRES. [Illusions concerning redistribution of essential raw materials.] Doctor Klotz



The Doctor proves that any proposal to eliminate causes for war by redistributing colonial territories to provide a redistribution of raw materials is doomed to failure.

(9) L'EXERCICE DU COMMANDEMENT. [The exercise of command.] Major Morisson

This article would make the foundation for an excellent lecture on the above subject.

### REVUE D'ARTILLERIE (France)

By Captain F.J. Tate, Field Artillery

#### January 1936

(1) LA MANOEUVRE ET LE TIR DU GROUPE DE 75 DIVISIONNAIRE. [The maneuver and fire direction of the 75-mm. battalion of division artillery.] Cannasse (See abstract, page 64)

(2) SUR LES VITESSES ANGULAIRES, EN TOIT ET BALAYAGE, D'UN OBJETIF AERIEN. [Angular speeds of aerial targets.] Lieutenant Boos

(3) AMÉNAGEMENT D'UN CHAMP DE TIR RÉDUIT, SYSTÈME RÉMY. [The operation of a miniature firing terrain, the Rémy system.] Lieutenants Fouille and Cronier

(4) LES ORIGINES DES RELATIONS ITALO-ÉTHIOPIENNES. [The origin of the Italo-Ethiopian relations.] Lieut.-Colonel Camps

#### February 1936

(5) RÉFLEXIONS D'UN COMMANDANT DE GROUPE SUR LA LIAISON INFANTERIE-ARTILLERIE. [Views of a battalion commander on infantry-artillery liaison.] Major Devinck

An abstract of this article will appear in the next issue of the Quarterly.

(6) TIR DE GROUPE? TIR DE BATTERIE? [Battalion fires or battery fires?] Lieut.-Colonel Mazenod

This is a brief article on the advantages and disadvantages of centralization and decentralization of the fires of a battalion of artillery.

(7) SUR LES VITESSES ANGULAIRES DU POINT FUTUR.—ZONES D'ACTION. [Angular speed of the future point of aerial targets. Zones of action.] Lieutenant Boos

(8) RELÈVEMENT SUR TROIS POINTS À L'AIDE DE DEUX POSTES VOYANT CHACUN DEUX POINTS. [Orientation on three known points when only two of the points are visible from each of two observation posts.] Couchet

#### March 1936

(9) A PROPOS DU PROBLÈME DES COUPS FUSANTS HAUTS. [Apropos of the problem of high bursts.] General Delegue

(10) LA SECTION DE RÉGLAGE PAR COUPS FUSANTS HAUTS MODÈLE 1924.—PROCÉDÉS D'INSTALLATION TOPOGRAPHIQUE. [The high burst adjustment section, 1924 method. Methods of topographical installations.] Major Brock

(11) ERREURS DANS L'INSTALLATION TOPOGRAPHIQUE D'UNE SECTION DE RÉGLAGE PAR COUPS FUSANTS HAUTS MODÈLE 1924. [Errors in the topographical installation of a high burst adjustment section, 1924 method.] Lieutenant Cointet

(12) COMMUNICATION TÉLÉPHONIQUE DIRECTE PAR CIRCUIT MIXTE. [Direct telephonic communications by mixed circuits (radio and telephone).] Captain Robert

### REVUE DE CAVALERIE (France)

By Major F. During, Infantry

#### January-February 1936

(1) LE III<sup>e</sup> CORPS DE CAVALERIE ALLEMAND EN LORRAINE; LA GARDE, 11 AOÛT 1914. [The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914.] Major Gazin

The German III Cavalry Corps had the mission for a strategic reconnaissance in the direction of St. Mihiel and to the west of Moselle and Meurthe at the beginning of the War. The Germans were at La Garde and



the General commanding the French 2d Cavalry Division issued orders to force the Germans from this place, which was accomplished by two battalions of infantry and a few guns. The Germans counterattacked with 10 battalions, 10 batteries, and 20 squadrons. The German 97th Infantry was making slow progress in its attack, when the commander of the German Uhlan brigade decided to assist and take the village by a charge. The Uhlans penetrated the village, and the French, already shaken by the infantry attack, had to leave the town in the hands of the Germans.

The conclusion drawn by the author is that in the first encounter at the beginning of a war, there still exist occasions for tactical surprises and that the Germans acted in accordance with the best cavalry traditions.

(2) MISSION HIPPIQUE EN HOLLANDE. [Breeding of horses in Holland.] de Chevigny

(3) LA MARCHE SUR KIEV. [The march on Kiev.] de Versonnex

The author describes in this article his personal experiences during the Polish advance into the Ukraine in May 1919.

## REVUE D'INFANTERIE (France)

By Captain Wendell G. Johnson, Infantry

January 1936

(1) LES ORIGINES DE L'ARMÉE FRANÇAISE. [The beginning of the French Army.] Lieut.Colonel de Gaulle

Commencing with Clovis and Charlemagne, the author carries the growth of the French Army up to the eighteenth century.

(2) PROCÉDÉS DE CALCUL DE LA SÉCURITÉ DANS LE TIR DES MITRAILLEUSES. [Procedure for calculating safety in machine-gun fire.] Lieutenant Carrat

(3) LIAISON INFANTERIE-CHARS. [Infantry-tank liaison.]

Another suggestion is made with a view to solving the perplexing problem of keeping rapid contact between infantry and tanks, particularly the assaulting echelon of infantry and its close-accompanying tank platoon. The solution offered is to use red smoke grenades either fired from the rifle grenade discharger, the small (47-mm. or 60-mm.) mortars soon to be issued to companies (French infantry), or else from the 81-mm. battalion mortar. By this means infantry troops could point out hostile resistance that the tanks have overlooked. Unfortunately, the discussion does not tell how the tank crew's attention is to be caught so that they will see the signals, nor how these signals are to be differentiated from the dozens of other flares, smoke puffs, etc., spotting the air over every acre of the battlefield.

(4) LES INFANTRIES ÉTRANGÈRES: L'INFANTERIE POLONAISE. [Foreign infantry: Polish infantry.]

The author outlines the organization of the Polish infantry which, in fifteen years, has evolved from the handful of men under Filsudski, which crossed the border on 6 August 1918, into a modern, well equipped arm of 90 regiments (30 divisions). It has moreover three special battalions and six tank battalions. The infantry regiment comprises three battalions of three rifle and one machine-gun company each. Each regiment also has a liaison section, an artillery section (two 75-mm. guns), a section of engineers, a section of mounted scouts, a cyclist section.

Rifle companies have a headquarters group and three platoons, each of which has three combat groups of 19 men, five of whom attend the machine rifle of the group. Each rifle platoon also has a four-man mortar squad armed with a Polish mortar. This weapon weighs 15½ pounds and can fire a one and one-half pound shell 750 yards, at a maximum rate of 20 rounds per minute. These company mortars are supplementary to the two 81-mm. Brandt mortars per battalion which are operated by the machine-gun company, in addition to its 12 machine guns.

Polish infantry tactics conform closely to French and American methods.

(5) EN RELISANT LES PENSEURS MILITAIRES: ESSAI SOMMAIRE DE DEFINITION DE LA TACTIQUE. [Re-reading military thinking: Abstract definition of tactics.] Lieutenant Rocolle

(6) ROUMANIE: L'ACTION DE L'AVIATION EN COOPERATION AVEC L'INFANTERIE. [Rumania: Action of aviation cooperating with infantry.] Major Sahini

The author believes that infantry will continue to play the principal role in a future war, particularly for Rumania. To its profit other arms must work, including aviation. The author says:

Observation Aviation executes its role by procuring for the commander information on the infantry situation, transmitting orders to infantry when other means fail, advising artillery on the infantry situation, infantry needs, and fire correction, and informing infantry on hostile resistance and indications of counterattacks or surprise operations.

Accompanying Aviation only becomes engaged occasionally to attack a demoralized enemy or to rescue hard-pressed infantry. It intervenes with machine guns and bombs against massed or unprotected troops.

Attack aviation is like a tank unit—it is flying infantry, which helps ground infantry to annihilate the forward enemy lines, attacks reserves, and facilitates the advance of friendly troops.

As for hostile aviation, it must be remembered that, in spite of poor direct vision when flying above 2,000 yards, aerial photography has become so effective that details, relief, and camouflage are distinguishable. Machine-gun fire is impressive but only slightly effective, whereas bombing, though less accurate than artillery fire, is more effective than machine-gun fire, especially against massed troops.

Observation planes usually fly singly.

Pursuit planes fire from an altitude of 50 to 200 yards in short bursts on groups, defiles, etc. In daytime attack or bombardment aviation first release their bombs and then open with machine guns at an average height of 200 yards.

Daylight bombardment is carried out by groups of 20 to 30 planes flying above 2,000 yards; night bombardment, by planes in columns, at three to five minute intervals and generally at low altitude.

Attack aviation operates by waves at 200 or 300 yards, with bomb and machine gun, with an effectiveness superior both to daylight bombardment and the fire of pursuit planes.

Infantry units must establish lookouts, have machine guns ready to fire on low-flying planes, and carefully camouflage.

Against observation planes flying high, it is necessary to hide; whereas against accompanying planes the machine gun and even the rifle must be brought into action.

Against pursuit planes attacking with machine guns, every possible weapon must fire, without fear of the uproar and without forgetting that the plane is more vulnerable than the troops it is attacking.

Against a machine-gun attack by two-seaters, the defense is dispersion and machine-gun fire. Against bombardment, troops must thin out, conceal themselves, lie flat, and put on masks. Against attack aviation, they must act with passive means (cover and camouflage) and by active means (heavy fire).

Finally, infantry must not forget that its principal arm is its morale, especially against fragile and costly aircraft, which are hard to replace and are often impotent against disciplined and well-commanded infantry.

(7) ROUMANIE: LA SURPRISE TECHNIQUE. [Rumania: Technical surprise.] Lieut.Colonel Obognano

Technical surprise is always possible because scientific progress is being developed constantly, industry is capable of rapid manufacturing, and new means of combat can be kept secret. In this secrecy lies the success of technical surprise. The new means of combat that a general seeks to employ as a technical surprise must be fully developed, massed sufficiently, and complete plans must be prepared before it is used. It must not be frittered away. Failure to follow these principles nullified much of the potential value of tanks and gas during the World War.

(8) **ANGLETERRE: PROTECTION DES COLONNES CONTRE L'AVIATION DE COMBAT LA NUIT.** [Great Britain: Protection of columns against aviation at night.]

Comments on British Field Service Regulations of 1929 as to their intent with regard to night marches. The British dislike night marches, and their Field Service Regulations reflect this dislike. "Movements by day may often be made with ample security . . . for these reasons night movements of important units should generally be limited to short periods."

**February 1936**

(9) **LA 17<sup>E</sup> DIVISION FRANCAISE ET LE VIII<sup>E</sup> CORPS ALLEMAND À GÉDINNE—HOUDREMONT—BIÈVRE—MONCEAU: 23 AOÛT 1914.** [The French 17th Division and the German VIII Corps at Gedinne—Houdremont—Bievre—Monceau: 23 August 1914.] (I) General Douce

The author gives a lively account of the fighting on 23 August 1914 in the French 17th Division. This is followed by the German side of the battle in the March issue of "Revue d'Infanterie." The maps used are better than average; scales are 1:80,000 and 1:40,000.

(10) **FICELLES ET GIBERNES.** [Proverbs.] General Grandcourt

Twenty-one proverbs, such as, "The military profession returns five-fold whatever we give to it on entering."

(11) **TENDANCES ACTUELLES DES INFANTERIES ÉTRANGÈRES.** [Modern trends in foreign infantry.] Lieut.Colonel Frenot

An abstract of this article will appear in the next issue of the Quarterly.

(12) **CRÉATION DE COMPAGNIES DE CHASSEURS PARACHUTISTES.** [Creation of parachute companies.] Lieut.-Colonel Desré

Colonel Desré's article is a foreword on the future of the two parachute companies now in process of forming in the French Army.

He reviews the military application of the parachute that Russia has been making, such as the debarkation of an entire battalion which floated to earth fully armed and in a few minutes had formed for action.

Russian territory is far different from French. So, too, would be the conditions in any theater of operations; yet the French general staff, in November 1935, decided that there were many possibilities in contingents of parachutists and decided to organize two companies; one at Chartres and one at Algiers.

Colonel Desré examines the two probable missions of these units in wartime: (a) covering missions; and (b) destruction missions.

As a covering force a parachute unit might be dropped where it could protect the landing of troops by air transport in rear or on the flank of the enemy position. Again, a large scale offensive operation aimed at distant objectives, and using mechanized forces, might require at a given time the possession of a crossroads, defile, or other important terrain feature.

As for destruction missions, innumerable tasks can be visualized in rear of the enemy lines, which would be suitable for parachutists; for example, bridges, railway nerve centers, factories, aviation matériel, dumps.\*

From the nature of these missions it is apparent that the parachutist must be trained as a ground soldier inasmuch as his work is on the ground, for the benefit of ground troops, and often in close liaison with them. His training must also, of course, include a large amount of flying and jumping with a parachute.

Ground combat is essentially infantry combat, except for demolition work, and therefore parachute units should be considered as infantry units transported by air to the scene of action. It would seem that parachute units should be organized along the following lines:

(a) Companies organized from officers and men taken principally from infantry units with a fraction from engineer units.

(b) Attaching these companies to air corps bases.

---

\*The Allies succeeded in destroying many important German installations by the intrepid spirit of a few men who let themselves be set down in rear of the enemy lines for several days.

(c) Ground instruction carried out under the same conditions as in other infantry units.

The character of the work is such that these units should be considered as a corps d'élite with all the attendant benefits, such as choice in recruiting, uniform, pay and advancement. These ideas have been considered by the General Staff.

Of course, it must be a volunteer unit, and, moreover, one requiring a severe medical examination.

As for the equipment carried by the parachutist, extreme care must be exercised in its design and carrying to insure that no obstruction will exist which might interfere with leaving a plane, or with the opening of the parachute.

A suitable organization for the company would be three light platoons, each of three combat groups, with two machine rifles each instead of one; and one heavy platoon containing a machine-gun section and a cannon section with two 37-mm. guns. The latter would be used against combat vehicles which might be expected to be the first combat elements against which the "chasseurs parachutistes" would come into contact.

The instruction of these units is a marvelous field for the ingenuity and initiative of young officers, with two general courses to be developed; one in aerial jumping, the other in ground fighting.

The former would first require instruction in the technique of jumping with an automatically opening parachute, then with a parachute controlled by the individual. Later the aerial instruction would concentrate on group jumping; that is, leaving the transport plane at regular brief intervals so as to quickly reform on the ground.

Ground training should specialize in defensive combat, rapid reorganization and deployment in any direction, powerful fire development, and the utilization of small, natural terrain features of defensive value as a means toward effectively meeting mechanized attacks, which seem the most likely initial threat to parachute units. Besides this, many special duties must be learned to prepare these units for the missions that may devolve upon them.

In addition to the forming of these two companies, the Minister of Air has already taken steps toward organizing pre-military instruction in "parachutism," designed to facilitate recruiting in these units by arousing youthful enthusiasm for this sport and familiarizing candidates with the technique of parachute jumping.

If the experiment succeeds, rumor says that three other companies will be organized so that there will be one in each "air region" of France and one in North Africa.

(13) PROCÉDÉ DE FIGURATION DES FEUX. [Procedure of representing fire effect.] Captain Paquette

A method of using, and instructing troops in the use of flags and other symbols employed for representing enemy and friendly fire effect during terrain exercises.

(14) DE QUELQUES PRINCIPES D'INSTRUCTION. [A few principles of instruction.] Captain Manie

French infantry regulations say that, in time of peace, instructing is the essential role of troop leaders. The author endeavors to show how this mission can be accomplished most satisfactorily. His methods emphasize the value of repetition, going from the known to the unknown and simple to complex, making the students discover and realize personally what is being taught, acting on the various senses of the men, and, finally, actually demonstrating and applying the subjects taught. Helpful ideas are also given on preparing instruction rooms.

(15) ITALIE: L'ARTILLERIE D'ACCOMPAGNEMENT. [Italy: Accompanying artillery.] Lieut. Colonel Tarrade

Italy appears to conform to the ideas expressed by General Challeat in the July and August 1935 issues of "Revue d'Infanterie," on the need and use of accompanying artillery as an organic part of the infantry regiment.

(16) ALLEMAGNE: ACTION D'UN RÉGIMENT RENFORCÉ DANS LA MANOEUVRE EN RETRAITE. [Germany: Action of a reinforced regiment during a withdrawal.] Major Quenot

March 1936

(17) L'INFANTERIE À PIED. UNE MANOEUVRE DE DIVISION. [Infantry on foot. A division maneuver.] General Karcher

General Karcher describes the 62-hour maneuver of the 21st Division composed of three infantry regiments, signal troops, reconnaissance troops, and two artillery battalions, in which foot troops marched 45 miles, of which two-thirds was covered at night. He shows what can be expected of troops with one year's training and how much more should be possible when men remain two years in service, as is now the case.

(18) NOTES SUR LE NOUVEAU REGLEMENT D'INSTRUCTION DE L'INFANTERIE ALLEMANDE. COMPAGNIES DE FUSILIERS. [Notes on the new German infantry training regulations: rifle companies.] (I) By "G"

German infantry now has its first change in training regulations since 1922, although for many years that has been discarded in favor of privately prepared and printed instructions.

The new manual, covering training as far as the platoon inclusive, is small (6x4 inches) and has a strong cover so that it can be easily carried in the pocket.

Less space is devoted in the new text to drill without arms, and training with arms is considerably simplified, and at the same time firing instructions are more detailed, especially with regard to automatic weapons. The kneeling position has been discarded.

A table of the armament, equipment, and mission of each individual is given. It is interesting to note the excellent manner in which all men are provided with necessary means to carry out their missions. Squad leaders, for example, carry field glasses and compasses.

A combat group ["group leader," "team leader" (assistant), rifle team (7), light machine-gun team (4)] has three closed formations—single line, column of files, and column of threes. Occasionally double ranks and double column are formed.

A deployed formation is taken separately by each team of the group with a distance between each that may reach 87 yards. The group leader goes with the team which he considers requires him, and the team leader goes with the other team.

Many formations can be used but two are most common: column and cluster (staggered triple line) (Schutzenrudel). Five paces is normal interval and distance.

The combat of the group is discussed under the headings: the fire fight, forward movement, assault, occupation and defense of a position, retirement, antiaircraft defense.

Under defense, it is prescribed that everyone must fight to the end even though surrounded. A stiff resistance helps the counterattacks made by reserves.

Against tanks, concealment is taught as the best defense although group weapons may be used if vision slits or loopholes are seen. But fire should ordinarily be withheld for the infantry following the tanks.

Rifle fire is prescribed against aircraft.

(19) LA 17<sup>E</sup> DIVISION FRANCAISE ET LE VIII<sup>E</sup> CORPS ALLEMAND À GÉDINNE—HOUDREMONT—BIÈVRE—MONCEAU (23 AOÛT 1914). [The French 17th Division and the German VIII Corps at Gédinne—Houdremont—Bièvre—Monceau: 23 August 1914.] (II) General Douce

In this issue General Douce relates the German side of the events of 23 August 1914, in the zone of the German VIII Corps and French 17th Division. (The French view was given in the February number of "Revue d'Infanterie.")

(20) APERCU HISTORIQUE SUR LES MUSIQUES MILITAIRES. [Brief historical account of military bands.] Major Delbé

The first organized groups of musicians marching at the head of troops were constituted during the Italian wars of the fifteenth and sixteenth centuries. Louis XIV was a great patron of military music. In the eighteenth century military bands really began to become an important part of combatant units. Marshal Saxe warmly indorsed martial music. Special

schools were formed. From that day to the present the evolution has been constant and praiseworthy.

(21) INSTRUCTION DES CADRES DE L'INFANTERIE: ETUDE DE CAS CONCRETS: MARCHE A TRAVERS BOIS. [Instruction of infantry leaders—study of concrete examples—advance through woods.] Lieut. Colonel Guigues

(22) CHILE: L'UTILISATION DU TERRAIN ET L'APPRECIATION DES DISTANCES. [Chile: The use of ground and the appreciation of distances.]

(23) CHILE: L'OBSERVATION DANS LES PETITES UNITES. [Chile: Observation in small units (a battalion observation post).]

(24) GUATEMALA: LA MARCHE D'APPROCHE. [Guatemala: The approach march.]

# REVUE MILITAIRE FRANCAISE (France)

By Major C.R. Moore, Corps of Engineers

January 1936

(1) GUERRE D'HIER ET DE DEMAIN. OFFENSIVE ET MOTORISATION. [Warfare of the past and future. Motorized units in the offensive.] General Pichon

In the October 1935 issue of "Revue Militaire Francaise" (see RML No. 61, page 129), General Pichon presented his suggestions for an impromptu defense against a motorized attack.

In the present article he discusses some of the questions involved in the organization, training, and tactical use of a motorized division. The proper employment of a motorized division is a complex operation, and the entire division must be trained together. All units must be capable of performing security missions. Above all, surprise on the march must be avoided by a system of distant reconnaissance and security. When in danger of contact, mass formations must be avoided, and small units echeloned in time, as is an infantry battalion in the approach march. When contact is made, command posts should be established well forward, and orders to the mass of the troops move from the front to the rear.

The article is supplemented by four illustrative situations.

(2) LES FORTS DE VERDUN DANS LA BATAILLE. [The forts of Verdun in battle.] General Benoit

This is a reprint of the letter of transmittal sent by Colonel Benoit, Engineer of the French Second Army, 23 November 1917, with his study of the effect of bombardment on the forts of Verdun during the battle begun 21 February 1916. It contains his conclusions to the effect that the forts offered greater resistance to the destructive fire of heavy artillery than the most optimistic had expected; that the superstructure of forts should be resolutely defended but the loss of the surface elements of a fort did not necessarily mean the loss of the fort; and that the defense of a fort depends chiefly on the energy and morale of the commander and troops.

(3) UNE LIAISON IMPERIALE AU SAHARA. [Imperial forces establish contact in the Sahara.] Colonel Charbonneau

A description of the assembly of detachments from Morocco, from Algeria, and from the French Army of Western Africa in the center of the Sahara Desert.

February 1936

(4) LES COMBATS AUTOUR DE LILLE. [Combat around Lille in 1914.] (II) Captain Van Belle

(5) LA MOBILISATION INDUSTRIELLE. [Industrial mobilization.] Lieutenant Ailleret

After an extensive discussion the author concludes that industrial mobilization is likely to play a predominant part in a future conflict. A well disciplined nation may secretly organize its resources on a war basis, accumulate large reserves, and establish wartime production schedules prior to a declaration of war. Since the change from normal peace-time production to that required to support large modern forces in the field ordinarily requires months, the defender may be confronted with a new form of surprise against which his armed forces can not compete.



(6) DISCOURS DE RÉOUVERTURE DE L'ACADÉMIE DE GUERRE ALLEMANDE. [Addresses at the reopening of the German War College.]

An account of the speeches by Generals Liebmann, Beck, von Blomberg, and von Fritsch at the ceremony celebrating the 125th anniversary of the establishment of the recently reopened Kriegsakademie. The brief remarks of General von Seeckt are given in full.

**March 1936**

(7) L'ARMÉE RAWLINSON DANS LA BATAILLE DU 8 AOÛT 1918. [Rawlinson's Army in the Battle of 8 August 1918.] Lieut. Colonel Gallini

An historical account of the part played by the British Fourth Army under General Rawlinson in the Battle of Amiens, begun 8 August 1918, a date to be designated later by General Ludendorff as Germany's "Black Day."

(8) L'ARTILLERIE DANS LA LUTTE CONTRE LES ENGINS MOTORISÉS. [The use of artillery against mechanized vehicles.] Lieut. Colonel de Mazenod

The author believes that the antitank weapons in the hands of the infantry will be unable to stop a determined tank attack, and the real job of defeating such an attack will devolve upon the artillery, which is better equipped to accomplish this mission. It will be accomplished by decentralizing fire control to battery commanders, particularly to those in direct support.

**REVUE MILITAIRE SUISSE (Switzerland)**

By Major F. Düring, Infantry

**January 1936**

(1) TACTIQUE D'INFANTERIE. [Infantry tactics.] (I) Colonel Sonderegger  
In this article, Colonel Sonderegger stresses that infantry should no longer be dependent on artillery, but should have long range weapons of its own.

(2) DÉFENSE DES LOCALITÉS. [Defense of villages.] Major Jacot

The author compares the instructions relating to the defense of villages as laid down in the Swiss Field Service Regulations and the French Infantry Regulations, respectively.

The introduction of tanks and armored cars has increased the importance of villages in a line of defense, since buildings provide cover for infantry against these methods of attack.

Major Jacot discusses the different ways in which a village may be held, i.e., with the line of defense: (a) in front of the village boundary; (b) in the actual outskirts of the village; (c) in rear of the village.

The circumstances in which these various positions may be held, and the advantages and disadvantages of each, are made clear by sketches.

**February 1936**

(3) L'ARTILLERIE D'ACCOMPAGNEMENT ET GRANDE PUISSANCE. [Accompanying artillery.] General Rouquerol

The author states that the experience of the War has shown that field artillery as an accompanying weapon was not a success.

(4) TACTIQUE D'INFANTERIE. [Infantry tactics.] (II) Colonel Sonderegger

Continuation of an article in which the author recommends that infantry should have its own long range weapons.

**March 1936**

(5) LE CERVEAU DU RÉGIMENT. ÉTUDE SUR LES POSTES DE COMMANDEMENT RÉGIMENTAIRES. [Infantry command posts.] General Clément-Grandcourt

This article deals with the emplacement and general organization and construction of the command post and is based on a manual by General Andriot.

(6) LA POSTE DE CAMPAGNE SUISSE. [Swiss field post office.] Lieut.-Colonel Bonjour

(7) TACTIQUE D'INFANTERIE. [Infantry tactics.] (III) Colonel Sonderegger



# RIVISTA DI ARTIGLIERIA E GENIO (Italy)

By Major F. Daring, Infantry

November-December 1935

- (1) LA PRODUZIONE DI ARMI E MUNIZIONI IN AUSTRIA-UNGHERIA NEL 1916. [Production of arms and munitions in Austria Hungary in 1916.] General Bollati

The author describes the effort made in 1916 by the Austro-Hungarian Empire to increase the output of arms and ammunition, especially of artillery, in spite of the shortage of raw materials. During that year Austria-Hungary was engaged on the Russian, Rumanian, and Italian fronts, and economy in man-power became essential, necessitating a very large expenditure of artillery and munitions.

Marshal Conrad's program for the year required an output of 13,000 new guns, of which 520 were heavy. Actually, up to the end of 1916, only 5,000 guns had been turned out and of these only 90 were "heavies."

The half-yearly output of the various munition works (viz., Skoda, Steyr, and others) increased as follows between 1914 and the second half of 1916:

Guns, from 240 to 3,554 (total construction 9,462).

Gun carriages, from 148 to 1,900 (total construction 6,998).

Machine guns, from 1,087 to 3,912 (total construction 11,102).

Rifles, from 149,000 to 630,000 (total construction 2,252,000).

- (2) LA TELEVISIONE ED IL SUO EVENTUALE IMPIEGO IN GUERRA. [Use of television in war.] Lieut. Colonel Gatta

Colonel Gatta begins this article by describing the fundamental principles on which television is transmitted and received. He then goes on to examine the construction and the functioning of the apparatus employed for this purpose and, finally, considers the possible uses of television in future military operations.

The author looks forward to the day when the television service will become a special branch of the engineers, and when a commander will be able to overlook operations as they take place, over a definite section of the front.

- (3) ARTIGLIERIA SUGLI STRAPIOMBI. [Pack artillery.] Major Molinari

- (4) ABBACO PER IL TIRO DI SBARRAMENTO CONTROAEREI. [Ranging of antiaircraft barrage.] Lieutenant Borsani

January 1936

- (5) LA BATTERIA DI ACCOMPAGNAMENTO DEL REGGIMENTO DI FANTERIA. [Accompanying battery with an infantry regiment.] Colonel Caboni

- (6) DIFESA DI UN CORSO D'ACQUA. [River defense.] Lieut. Colonel Verna

The author discusses the question of the defense of an unfordable river. A position behind a river may be selected for two reasons: (a) to economize one's own forces, so as to have a larger force available in less favored sectors, and (b) to strengthen a defensive position. Colonel Verna discusses the pros and cons of each method.

In this article the writer deals with the second case. Here the defender has two alternatives. He may occupy an advanced position and contest the crossing with all the means in his power, or he may occupy a position some distance to the rear and endeavor to destroy the bridges that the enemy may construct across the river.

A point that deserves special attention is the great increase in mechanization in modern armies. This makes it important that there should be no gap in the line of defense. The construction of bridges and the passage of armored vehicles over them must be prevented. The obstacle must be kept under infantry and antitank fire. Artillery fire by itself is not sufficient. It will answer its purpose by day, but cannot do so by night or in artificial fog.

The choice of a rearward position is the more attractive and spectacular of the two. It gives the defender the opportunity of carrying out a counterattack on an enemy who has the river at his back. But it is risky and requires a large force.

A forward position is the safer alternative and requires fewer troops. It is a matter of playing for safety, and is less likely to achieve a brilliant success.

The selection of one solution or the other will depend upon the forces available, the general situation, and very largely upon the character of the commander.

(7) *LA VIABILITÀ NELLA GUERRA MOTORIZZATA E LA RELATIVA ATTIVITÀ DEL GENIO.* [Rapid movement in war based on motorization and employment of engineers.] Lieutenant Corso

Lieutenant Corso states that the three characteristic features of future wars will be signal communications, motorized vehicles, and roads. He lays stress on the importance of mechanizing and motorizing engineer units. It is important that engineers should be moved up quickly to repair interruptions to communications. Moreover, owing to the scarcity of trained specialists, it should be made possible to utilize at once those available in the places where they are needed.

The most important works on which engineers are likely to be employed are:

- Construction and maintenance of roads;
- Checking the carrying capacity of bridges and strengthening them;
- Constructing extemporized bridges and footbridges;
- Constructing regulation bridges and footbridges.

Each of these sub-heads is described in turn. The author concludes by discussing the question of the training of officers.

#### February 1936

(8) *COME SI È ARMATA LA FANTERIA ITALIANA.* [The armament of the Italian infantry.] Brig. General Soddu

(9) *PROBLEMI DI STRADE E MOVIMENTO—PARTICOLARI ASPETTI D'INTERESSE MILITARE.* [Problems of roads and movement.] General Maltese

(10) *INFLUENZA DEL NUOVO ARMAMENTO DELLA FANTERIA SULL'AZIONE DELL'ARTIGLIERIA DIVISIONALE.* [Influence of infantry armament on division artillery.] Colonel Chirieleison

(11) *IMPIEGO DI REPARTI DEL GENIO NEL FORZAMENTO DI UN CORSO D'ACQUA.* [Employment of engineers at river crossings.] Lieut.Colonel Biagioli

#### ROYAL AIR FORCE QUARTERLY (Great Britain)

##### July 1936

(1) AIR STRATEGY. (II) Lieut.-General Golovine

(2) THE PRINCIPLES OF WAR AND THE R.A.F.—SECURITY

(3) BOMBER AIRCRAFT—A REPLY

(4) THE NAVIGATION PROBLEMS OF AN AIR STRIKING FORCE. Flight-Lieutenant May

(5) AIR INTELLIGENCE—THE ARMY'S SAFEGUARD. (A review, by A.J. Insall, of General Armengaud's book)

(6) A PROGRESSIVE ENGINEERING BRANCH FOR THE R.A.F. A reply. By "D.K."

(7) A NIGHT WITH ARMORED CARS. By "C.S.R."

#### ROYAL ARMY SERVICE CORPS QUARTERLY (Great Britain)

##### May 1936

(1) THE DELIVERY OF SUPPLIES CONSIDERED IN THE LIGHT OF TRAINING MEMORANDUM No. 15

(2) THE EQUIPPING OF FIELD UNITS WITH THEIR MECHANICAL TRANSPORT VEHICLES

(3) THE MAIN SUPPLY DEPOT CONSIDERED IN THE LIGHT OF RECENT DEVELOPMENTS

(4) NOTES ON THE KEEPING OF WAR DIARIES

**ROYAL ENGINEERS JOURNAL (Great Britain)**

**June 1936**

- (1) THE AIR MAPPING OF THE NORTH-WEST FRONTIER. Captain Crone
- (2) EXPLORATIONS AND EVACUATIONS IN PALESTINE. Colonel Close
- (3) ENGINEER ORDERS. Captain Foott
- (4) THE COLLECTIVE TRAINING OF MOBILE A.A. SEARCHLIGHT UNITS.  
Lieut.-Colonel Grove-White

**SANCT CHRISTOPHORUS (Germany)**

By Lieutenant Colonel S.J. Heidner, Infantry

**January 1936**

- (1) KRITISCHE BETRACHTUNGEN ZUR "ABWEHR VON KAMPFWAGEN."  
[Critical observations on antitank defense.]

This article consists of two replies to a previous article of the same title which appeared in the November 1935 issue of "Sanct Christophorus."

The first is by a former tank commander. He believes that the improvement in tanks and antitank weapons has not yet materially changed the methods of antitank defense employed toward the end of the World War. Regarding the question as to which shows the most promise of success, the tank or antitank defense, he thinks that the answer can be found in the pre-war race between fixed fortifications and heavy artillery. The two will develop in parallel, and the ultimate victory of one over the other will depend upon the skill of its employment in battle. He feels that the entire field of antitank defense is still too unsettled to permit definite conclusions to be drawn. This author believes that a frontal tank attack on a large scale will not be practical for the reason that it will be discovered too soon, and that the defending artillery and infantry will have too long a period during which to operate against the attacking tanks. A tank attack well against the hostile flank where it can break in between the defending infantry and artillery, he thinks, gives the greatest promise for success.

The second reply to the original article is by a general staff officer. This writer gives no ideas on antitank defensive measures, but he goes into the question of the form of tank attack that the defender must expect. He accepts the principle that tanks are most effectively employed against the defender's flank. They will not only be used against the immediate flank of the defender to gain a tactical victory, but, supported by motorized infantry, artillery, and engineers, they will be used to make deep turning movements against vital objectives in the defender's rear areas. But he states that the terrain and international boundaries will not always permit such deep turning movements. Then the attacker must first attack frontally in order to break through and open the way for the deep-striking mechanized force. The author concludes that the defender must be prepared against two general types of tank attack: first, tanks as part of mechanized divisions which will operate far around the defender's flank or exploit a breakthrough; and second, tanks operating in conjunction with the infantry making the main attack for the purpose of gaining an immediate tactical victory.

- (2) PANZER- UND MOTORISIERTE VERBÄNDE BEI DEN MANÖVERN FREMDER HEERE. [Armored and motorized units in the maneuvers of foreign armies.]

This article maintains that during the 1935 maneuvers of most foreign armies the trend toward motorization was manifest. The author shows what was done in a number of different countries. The following is a brief summary of his review:

Italy.—During the month of August, Italy held maneuvers in the Alpine country with three "fast" divisions and a new motorized division. The motorized division consisted essentially of two infantry regiments on trucks, a motorized artillery regiment, a tank battalion, and several motorized machine-gun companies. Held in reserve initially, this division was

rushed to the front by two night marches of about 62 and 18 miles, respectively, and successfully performed the mission assigned to it. During the four days of the maneuver 400 tons of gasoline were consumed. An Italian periodical commented that this high fuel consumption should be a subject for serious thought.

Great Britain.—In the British maneuvers held on the Salisbury plain in September, experimentation in the use of motorized and mechanized units was not stressed to the extent that it had been in previous years. The tank regiment taking part in the maneuvers was divided among the divisions. One fully motorized brigade and one partly motorized were used. In the play of the maneuver each side held out a tank battalion up to the last for the purpose of striking a final decisive blow.

Russia.—During her big maneuvers in September, Russia made extensive use of motorized and mechanized units, and at the same time employed large numbers of tanks to support the infantry units. In the first phase of the maneuver the attacking force broke through the defender's line by a strong frontal attack of infantry heavily supported by tanks. After the breakthrough, a cavalry corps operated through the breach. Later the maneuver developed into a series of successive flanking maneuvers by both sides, using cavalry, motorized and mechanized units, in which each side had its flanking force outflanked in turn by a new flanking force of the other. The author comments particularly upon the quantities of tanks and motors employed in these maneuvers.

Austria.—Austria used a new motorized division in the general maneuvers held in September. It consisted of four infantry battalions mounted on cross-country vehicles, two cavalry regiments, and a number of motorized batteries. The division is also to have an armored-car battalion. The motorized division was used in the maneuver to fight a delaying action. It held out three mechanized infantry battalions for a turning movement against the hostile flank, but this movement, for some unknown reason, was not executed.

Hungary.—The Hungarians in their maneuvers used a "fast" division composed of four cavalry regiments, four cyclist battalions, some armored units, and some artillery. Nothing definite about the employment of this division was given.

(3) TAKTISCHE AUFGABEN. [Tactical problems.]

In this and each of the following issues of "Sanct Christophorus" there will be given a map problem dealing with some phase of an action involving a motorized or mechanized unit. The problem in this issue deals with a motorized battalion acting as an advance guard. A solution to the problem appears in the next issue.

(4) MEIN LETZTER TANKANGRIFF. [My last tank attack.]

This is the story of a German heavy tank in the July 1918 offensive south of Rheims. It is told by the lieutenant who commanded the tank. The anxious waiting during the 3½-hour artillery preparation; the advance over the German trenches and over "No Man's Land"; the crossing of an Allied trench so wide that the tank commander did not expect to make it; the stalling of the motor; the tank being struck by a shell and set on fire; the escape from the burning tank; hiding in a shallow trench until dark; and the return to his own lines guided by the stars, are all realistically described by the author.

February 1936

(5) ETWAS ÜBER EINSATZ DER PANZER-ABW.-WAFFEN. [The employment of antitank weapons.]

This article is a serious study of the functions of the division antitank units and of the correct method of their employment. In the German infantry division there is an organic motorized antitank company with each infantry regiment, and a motorized division antitank battalion of three companies. The conclusions of the author as to the correct employment of the antitank units are very briefly as follows:

On The March.—In general, the regimental antitank companies are intended especially for the protection of the regiments against scout and

armored cars, and the division antitank battalion is a reserve of the division commander to be used against a massed tank attack. The regimental antitank company marches in the regimental column. If the regiment is acting as an advance or flank guard, the three platoons of its antitank company are disposed as follows: one platoon has a gun with the point, another gun at the head of the support, and a third gun at the tail of the support; another platoon has its guns at the head and at the tail of the main body; and the third platoon marches with the motorized combat trains. If the regiment is marching with the main body of the division, one platoon of the regimental antitank company marches at the head of the regiment, one at the tail of the foot elements, and one with the motorized combat train. The disposition of the division antitank battalion depends upon whether the division is an interior or a flank division. In an interior division one company of the antitank battalion marches at the head of the main body, and the battalion, less one company, marches at the tail of the last infantry regiment. If the division is on a flank, its antitank battalion operates on the exposed flank at a distance of from 2 to 3 miles from the column, the companies leap-frogging from position to position.

**On The Defensive.**—On the defensive the mission of the regimental antitank company is to stop hostile tanks before they penetrate the main battle position. The company is attached, by platoons, to the infantry battalions, and the guns are emplaced between 300 and 400 yards behind the main line of resistance in well concealed positions. The function of the division antitank battalion is to prevent a deep penetration or a breakthrough of hostile tanks. It should be prepared to stop the hostile attack in front of the friendly artillery zone. If the entire battalion is held in reserve, it probably cannot be brought into action in time to accomplish this mission. One or two companies are therefore usually emplaced in front of the artillery positions so as to cover the most likely approaches for hostile tanks, while the remainder of the battalion is held in reserve.

**In The Attack.**—In the attack the regimental antitank company must operate in very close liaison with the assault battalions. The antitank platoons move by bounds from one firing position to another, keeping close behind the advancing infantry. The division antitank battalion operates in the zone between the infantry and the artillery. It must displace forward from position to position ahead of the artillery.

(6) NEUE PANZERFAHRZEUGE UND ABWEHRWAFFEN DAGEGEN IN ALLER WELT. [New armored vehicles and anti-armor defensive weapons throughout the world.]

This article is a foreign press review covering the latest developments in mechanization and anti-mechanized defense in the foreign armies. The following are a few of the interesting reviews in brief:

**Use Of Amphibian Tanks.**—"Krassnaja Swjesda" has an article on the employment of amphibian tanks for the support of landings on hostile shores. The tanks, according to this author, would be placed in the water directly from the transports at night or under cover of a smoke screen. The tanks would then swim ashore, reconnoiter for good landing beaches, and then cover the landing of the main forces by short counterattacks against the defending force.

**The Heavy French Tank D.**—This tank is reported to have a weight of 100 tons. It is 14 yards long, 3.2 meters wide, and 5 meters high. Its 2400 horsepower motors give it a speed of about 13 miles per hour, and a radius of action of 75 miles. The tank carries a 155-mm. gun and 11 machine guns besides 6 reserve machine guns. It can cross a trench 6.5 yards wide, and pass over an obstacle 3 yards high.

**Great Britain: Actual State Of Motorization And Future Plans.**—Great Britain has completely motorized 2 cavalry regiments, 10 light field artillery battalions, all the medium, heavy and antiaircraft artillery, and all the engineers, signal troops, infantry combat trains and supply trains. In India she has motorized 2 light artillery battalions as well as all the medium artillery. Plans call for the mechanization of 8 cavalry regiments of which 2 will be converted into armored-car regiments. Experiments are being conducted to determine the feasibility of combining horse cavalry

brigades with mechanized brigades and mechanized artillery in the same division.

**Motorized Units In The French Fall Maneuvers.**—France carried out extensive motorized maneuvers in the Champagne during September. On one side there was a motorized division, while on the other there was a corps composed of a light mechanized division and a motorized division. A large number of all types of air units took part in the maneuver. The light mechanized division was not used as a shock unit, but rather to operate against the hostile covering forces or to strike a quick blow at an unprotected flank. The conclusion was reached that the motorcycle is the most practicable means of communication for motorized units. On the march the radio was used, but the enciphering and deciphering of messages greatly delayed their transmission. The 25-mm. antitank guns which had been introduced during the summer were considered very satisfactory. The new D-1 tank was greatly praised. Armored cars were considered suitable for reconnaissance and for attacking light forces, but not for combat with tanks or with troops supported by artillery.

**Antitank Defense In Great Britain.**—The British recently carried out extensive tests in the use of mines for antitank defense. For this purpose 3 engineer companies on trucks with 3,300 mines were attached to a division. In one night one of these companies established a mine field of 240 mines, set up 9 separate mine barriers using 410 mines, and created 6 more barriers by means of wire strung between trees. Three forms of mine fields were used:

(a) On a front of 900 yards, 1,500 mines in groups of four, with 1.35 yards between mines in a group, and 3.5 yards between groups.

(b) On a front of 900 yards, 1,000 mines were placed in two rows 1.8 yards apart with the mines staggered.

(c) A represented mine field, similar to the preceding one, but using only 700 mines.

The infantry regiments, according to foreign press reports, are to have their infantry mortar companies changed into accompanying gun companies. These new companies will have antitank guns as well as infantry mortars. The antitank guns are of 35-mm. caliber, are drawn by a small caterpillar tractor, and are effective against all armored vehicles up to 1,500 yards.

(7) TAKTISCHE AUFGABE. [Tactical problem.]

This problem deals with the action of a mechanized reconnaissance detachment. A solution to the problem of the preceding issue is given.

#### March 1936

(8) VERHALTEN VON KAMPFWAGEN GEGENÜBER "TANKMINEN." [Conduct of tanks when confronted with antitank mines.]

The author of this article is convinced that in the future mines will be a standard weapon for antitank defense. He visualizes a light mine that can be produced in large quantities. The utility of such a mine comes from the following qualities: it will put a tank out of action; it can be used in mass; it can be quickly installed; it can be easily concealed. The author believes that these mines will be used even in mobile situations.

According to this article, mine fields will generally be located in front of the main line of resistance where they can be covered by small-arms fire. Some mines will also be used to protect artillery and antitank gun emplacements and command posts. Within the main battle position the extensive use of mines would be dangerous to the defender. It may be possible, however, to have on hand a reserve of mines which can be quickly laid within the position itself when a major tank attack is launched.

The author believes tank formations will have particular difficulty in avoiding serious losses from mine fields, because following tanks will not be aware of the fact that a leading tank has been stopped by a mine. These mines will not create a terrific explosion; they are only powerful enough to blow off a tread. In fact, the author thinks that in the excitement of the battle the crew itself of a tank which has been stopped by a mine will not always be aware of the cause of its trouble.



Every effort should be made to locate mine fields by reconnaissance. But mine fields will be hard to locate by aerial reconnaissance, and ground reconnaissance will usually not be possible. The writer thinks that special mine reconnaissance tanks will have to be used. These will be equipped with a heavy roller in their front which will detonate the mines encountered without danger to the tank. Such special tanks would operate under cover of smoke screens. The disadvantage of this proceeding, of course, is that it may give away a contemplated tank attack.

This article leaves the impression that the antitank mine is a great danger for the tank, and that satisfactory means for the tank to protect itself against them have not yet been developed.

(9) ABWEHR GEPANZERTER KAMPFFAHRZEUGE. [Defense against armored vehicles.]

This is a thorough study of the subjects of the antitank gun and of passive antitank defense. The article is profusely illustrated with photographs of the more interesting types of antitank guns developed in different countries. Some of the important conclusions of the author are as follows:

**The Antitank Gun.**—This weapon must operate in closest liaison with the infantry. It can only perform its mission properly if it can engage hostile tanks the moment they enter the defensive zone. This requires a light gun; not only one that can be drawn by a few horses or a light tractor, but one that can be moved anywhere by hand without being taken apart. Hence, 660 pounds is about the maximum weight for such a gun. The weapon must fire a projectile that will pierce the armor of a tank even when the angle of impact varies considerably from the normal, and to assure the disabling of the tank the projectile should carry an explosive charge with at least the effect of a hand grenade. The projectile must have a high muzzle velocity, not only to give it the necessary penetrating power, but also to give the trajectory a long danger zone. A gun of about 37-mm. caliber should give the proper balance between the minimum ballistic requirements and the maximum permissible weight.

The carriage should be provided with a shield to protect the gunners from hostile machine-gun fire. The entire assembly must be kept small and low to the ground in order to facilitate concealment, and in order to present only a small target to the enemy. The gun should have a high rate of fire, and should be capable of being put into action quickly. Pack or horse-drawn guns do not meet the requirements for going into action quickly. The following types of guns are now being used in different countries for antitank defense:

(a) Guns with a caliber of from 32-mm. to 40-mm. designed exclusively for antitank defense.

(b) Guns with a caliber of about 50-mm. intended for use both in antitank defense and as infantry accompanying weapons.

(c) Guns with two interchangeable barrels of different calibers: a smaller bore for antitank defense, and a larger one for infantry accompanying missions.

(d) 20-mm. machine guns. This is considered to be the smallest caliber with sufficient armor-piercing capacity for antitank defense.

(e) 20-mm. shoulder weapons with special devices for taking up the shock of recoil.

(f) Special guns up to 55-mm. especially designed for use against very heavily armored tanks.

(g) 30-mm. machine guns on self-propelled mounts especially designed to attack tanks that have broken through the forward defensive zone.

**Passive Antitank Defensive.**—Passive antitank measures consist largely of the proper utilization of natural tank obstacles. The following natural obstacles may be considered impassable to tanks: thick woods; water over one yard deep, deep ditches and sunken roads, railroad embankments or other elevations at least 1.5 yards high and with a slope of at least 40°, and swamps impassable to foot troops. Long slopes and rough ground, though they may not stop tanks, will compel them to slow down so that they may be effectively attacked by antitank weapons. Artificial obstacles have their best application when used in connection with natural



ones. Partial natural obstacles frequently may be made impassable by artificial means, thus a bank with insufficient slope to stop tanks may be dug away at the bottom to give it the necessary slope. T-beams, rails or posts set firmly into the ground and inclined toward the direction from which tanks are expected to attack, and ditches over three yards wide with steep sides, are examples of good artificial obstacles. Antitank mine barriers can be more easily installed than other artificial obstacles, and great use is being made of them in foreign armies.

The author believes leadership in every great battle of the future will have to include plans for the defense against massed armored vehicles seeking to deliver a decisive blow. Antitank weapons alone, he states, are not sufficient to ward off such a blow; there must be timely information through the work of all reconnaissance agencies, proper utilization of the terrain by all elements, and there must be cooperation between all arms.

(10) TAKTISCHE AUFGABEN. [Tactical problems.]

There is no new problem in this issue. A solution to the problem of the preceding issue is given.

### **SIGNAL CORPS BULLETIN**

**May-June 1936**

- (1) THE G-2 SIGNALS TEAM. Captain Black

**July-August 1936**

- (2) NOTES ON THE MOTORIZATION OF THE SECOND SIGNAL COMPANY. Captain Tatam

- (3) THE ARMY AIR ALERT NET. Captain Marriner

- (4) SIGNAL COMMUNICATION FOR THE CIVILIAN CONSERVATION CORPS. Major Browning

- (5) POWERS AND LIMITATIONS OF RADIO COMMUNICATION WITHIN A MODERN FIELD ARMY. Major Moran

- (6) RADIO COMMUNICATION WITH THE BYRD EXPEDITION. Lieutenant Hutheson

- (7) PRINTING TELEGRAPH SYSTEMS. Woodward

- (8) SECRET CAUSES OF GERMAN SUCCESSES ON THE EASTERN FRONT. Nikolaieff

- (9) RADIOMETEOROGRAPHY AS APPLIED TO UNMANNED BALLOONS. Captain Wenstrom

- (10) ACCURACY BEFORE SPEED. Major Bennett

- (11) CONQUERING MAUNA KEA. Captain Roberts

- (12) METEOROLOGICAL SERVICE FOR THE 1936 G.H.Q. AIR FORCE WINTER MANEUVER IN NEW ENGLAND

### **VETERINARY BULLETIN**

(Supplement to "The Army Medical Bulletin")

**April 1936**

- (1) "MECHANISED" VETERINARY SERVICE

- (2) VETERINARY SERVICES IN ABYSSINIA

### **WISSEN UND WEHR (Germany)**

By Major G.J. Braun, Infantry

**January 1936**

- (1) FELDMARSCHALL GRAF VON HAESELER. 19. 1. 1836—26. 10. 1919. [Field Marshal Count von Haeseler, 19 January 1836-26 October 1919.] Major General Buchnick, Retired

The author presents an excellent narrative of the early life and influences which molded the character of Field Marshal Count von Haeseler, whose close study of Scharnhorst and Frederick the Great and his intimate association with Prince Friedrich Karl convinced him that the training of the German soldier should be changed from blind obedience to that of intelligent individual initiative. The training of the former German soldier

is best described by the statement of Meckel: "Friedrich's Grenadiers were a machine, that is the type of machine I desire . . . one that kept advancing in the face of a salvo of shot even though half the personnel lay bleeding and dying on the ground." Haeseler constantly emphasized that the troops should not be a machine but considered as having intelligence. He realized that in modern combat the necessity for use of cover and dispersion of personnel made the control by the commander difficult. To meet this problem he advocated intelligent instruction in initiative in combat as the solution.

Haeseler was opposed to fixed formations for the various tactical situations and advocated flexibility whereby the commander decided upon the attack formation from his estimate of the situation, taking into consideration time and distances in his decision. Although he lived during the same period as Count v. Schlieffen, he did not believe in the wide envelopment taught by v. Schlieffen. So intense was he in his desire to prove his contentions relative to the proper training of the soldier, that he refused the position of Chief of Staff of the German Army to remain 13 years in command of the XVI Corps which he had trained to perfection in combat discipline.

He worried about the Schlieffen plan and opposed it, calling the plan a map strategy which would not fit in with war conditions. The new German Army has benefited from his teachings, for it is following the Haeseler or Scharnhorst idea that "never again will mechanically operated heads triumph over that which has a spirit and a soul."

According to Lieutenant General Marx, who served many years under the Field Marshal, v. Haeseler was exceptionally exacting about the manner and quality of the combat training of his troops and their combat discipline, but he never was a stickler on uniform regulations, parades, or eyewash. The author states that he was the most beloved of all commanders by both officers and men alike. The Field Marshal personally held only combat inspections and prepared problems for such inspections himself, without consulting any member of his staff. Polished, elegant parades, and meticulous inspections had no lure for the Marshal. His whole heart and soul lay in combat training and simulation of combat conditions.

(2) ÜBER ENTSTEHUNG, VERLAUF UND LEHREN DES CHACO-KRIEGES 1932-1935. [The cause, progress and lessons of the Chaco War, 1932-1935.] Faupel

An abstract of this article will appear in the next issue of the Quarterly.

(3) TAKTISCHE ERFAHRUNGEN AUS DEN DARDANELLENKÄMPFEN 1915. [Lessons from the Dardanelles Campaign, 1915.] Mühlmann

The author has endeavored to show the error of the Allied attempt to force the Dardanelles with their fleets. This attempt met with failure as did their efforts to land forces to silence those forts which prevented the passage of the ships. The author shows that the entire enterprise was too hastily conceived and that a landing against a fortified and defended shore is the most difficult maneuver in warfare. After the Germans defeated the Serbians he shows how they were able to supply the Turks with troops, artillery, and munitions. The nature of the shore line and shallow depth of water close in made the Allied enterprise difficult. The author describes the open warfare, position warfare, and final evacuation by the Allies.

#### February 1936

(4) DER KRIEGSBEDARF UND SEINE DECKUNG ALS PROBLEM DER KRIEGFÜHRUNG. [War demands and their supply as a problem to military leaders.] Korfes

An excellent article on the question of the supply requirements of a nation at war and the methods used to meet these requirements. The author states that the question is not how much will actually be required, but how much can be extracted from industry in order to provide the maximum impetus and energy to the military effort. He emphasizes the importance of having the supplies so distributed that the bulk of them are located at the point of the main effort. The secondary fronts should be so provided that in the event of a defeat at any of the secondary fronts it will not result in a surrender of the main forces. He further states that the maximum

supplies, material or otherwise, should be made available for the combatant forces and that the civil population must survive or be content with the minimum requirements necessary for the maintenance of life and bodily strength. The military demands must have the united support of the nation's industry and the populace. In his conclusions the author made the important statement that the German Supreme War Council has the power and final decision to enable it to dictate to the war industries and civil population their requirements and how much will be distributed to them. To demonstrate that combat requirements change from time to time, the author provides considerable data such as number of artillery pieces per group of men during various wars or battles. For example, in 1806, during the Seven Years' War, the Prussian Army had one field piece per 380 men, and in 1914 the German Army had one field piece per 327 men; by May 1915 it had one field piece per 113 men, and by May 1918, one field piece per 25 men engaged. He provides similar examples as to ammunition expenditure.

(5) STRATEGISCHE VERTEIDIGUNG IN DER SEEKRIEGSGESCHICHTE. [Strategic defense in naval history.] Vice Admiral Gadow, Retired

The author cites various types of naval strategy. He discusses the blockade system to bottle up ports of entry into a country, thus depriving that country of its necessities. He cites incidents of the British-Holland War (1652-1654), the American Civil War (1861-1865), and the submarine warfare of the World War. He discusses the strategy of the navies in the Russo-Japanese War and concludes with the Clausewitz and Cromwell maxim: "That whoever seeks victory on the sea must always attack."

(6) DAS PROBLEM DER OBERSTEN KRIEGSLEITUNG UND SEINE LÖSUNG IM WELTKRIEGE. [The problem of General Headquarters and its solution in the World War.] v. Frauenholz

The author discusses the difficulties of the commander-in-chief of forces where allies are involved. He cites examples of political interference, dictation, etc., influencing the decision of the commander-in-chief. Bismarck and Moltke state that the mission of the army is the destruction of the hostile armed forces and the restoration of peace under conditions laid down by the politics of the government. The author presents many historical examples of coalition of nations showing how their aims conflicted with each other and thereby multiplied the responsibilities of the commander-in-chief for cooperative combined action.

He states that in all countries at war there is always an opposition party which for some reason or other is continually calling for and taking steps to end the conflict. It requires great confidence in the military leaders to retain the good will and cooperation of the allies. He discusses the effect of some military act, such as the unrestricted U-Boat campaign, on neutrals and its own internal politics.

(7) DAS KRIEGSJAHR 1915 UND DER WIRTSCHAFTSKRIEG. [1915 and the industrial war.] Pantlen

The author opens his article with the statement that the German high command had missed an opportunity for a decisive victory in 1914 by failing to have its major concentration on the Eastern Front. He then describes the allied strategy of blockade and industrial warfare whereby they hoped to starve and bankrupt Germany. He explains that each played a great role in forcing Italy to join the Allies. The author agrees with Winston Churchill, who stated that the naval blockade could not be broken by Germany and with the defeat of Russia, Asia and the Orient became an open field to secure the necessary raw products.

(8) FRANKREICH'S POLITIK IM ZENTRALAFRIKANISCHEN RAUM. [French politics in Central Africa.] Reichelt

Following the loss of its North American colonies, France suffered a lull in its colonization efforts. It was not until 1839, during Louis Philipp's reign, that exploration was revived by Savorgnan de Brazza. The interest created by his reports and those of Stanley gave renewed impetus to the colonization aspirations of the French. The author reviews the trend and direction of this colonization move and how it conflicted with other European nations. He also mentions the treaties which divided the spheres of

influence of the various European countries and finally gave France a continuous territory from the Mediterranean through Central Africa to the Atlantic. He states that the source of colonial strength lies now in the geographical unity of the Western and Central African domain. This has a profound political, military, and commercial influence on France's position in European politics. In but few locations does it experience pressure from other nations. Also its Red Sea colony serves as a base along the line of communications to its Indo-Chinese colonies.

(9) DIE EIGENHEITEN DER LUFTZIELE UND DER ABWEHRWAFFEN. [The characteristics of the air targets and the antiaircraft weapons.] Kuhlenskamp

This is a short but interesting discussion of the variables which make it difficult to hit air targets. The author refers to the maneuverability of aircraft which permits rapid movements in three dimensions, namely, to the left and right and up or down. He also gives the maximum ceiling at which planes can fly and how this limits the movements of the plane. The excessive speed, plus the small size of the target, with its limited vulnerability, makes marksmanship difficult. The author then discusses the characteristics of the antiaircraft weapons, their speed of fire, range, types of projectiles, sights and instruments, such as range finders, correctors, etc.

### March 1936

(10) SEEKRIEG VON MORGEN. [Naval warfare of tomorrow.] Captain v. Waldeyer-Hartz, German Navy, Retired

In this article the author expresses his opinion as to the nature of future naval warfare. He comments on the Japanese situation, stating that no matter how heroically and fanatically Japan would fight at sea, the combined fleets of England and America could deny her the essential raw materials and could starve her to submission. He feels that Russia and America are about the only nations which could withstand a blockade war because of their natural resources. The question of tonnage, armament and speed limitations for various types of ships, which has been the controversial subject at various naval conferences in which England has met opposition by America, France, Japan and Italy, is covered in this article. The author is a firm believer in battleships as the backbone of a navy. He explains why the submarine has lost its great threat due to the perfection of echo and sound detectors on surface ships and aircraft reconnaissance.

Naval aviation, armament of merchant ships and mines and their influence in the future war are also discussed by the author who summarizes his article as follows:

(a) Naval warfare of tomorrow will primarily resolve itself to an effort to starve the enemy commercially and industrially into submission.

(b) The operative measures will therefore be the protection of its own merchant marine and the attack of hostile merchant marine.

(c) Due to the wide dispersion of marine trade routes, the naval warfare will extend to all the seas, especially where marine trade is heaviest.

(d) The difference between warships and merchant ships will disappear; both will be combatants—either aggressors or defenders.

(e) When other than a decisive battle is sought, the majority of engagements will be in the nature of individual combat or involving but few heavier ships.

(f) The battleship which is equipped for its own protection and for offense still represents the vehicle for decisive action in the most acute naval combat.

(11) VORRATSWIRTSCHAFT, IHRE KRIEGSWIRTSCHAFTLICHE NOTWENDIGKEIT UND VOLKSWIRTSCHAFTLICHE ERWÜNSCHTHEIT. [Industrial mobilization.] Prof. Goebel

A most interesting article in which the author advocates the creation of a national reserve of raw materials, machinery, etc. After commenting on the various articles and products required and the needs of a nation in peace and war time, he discusses his ideas on industrial mobilization and places them in the following categories:

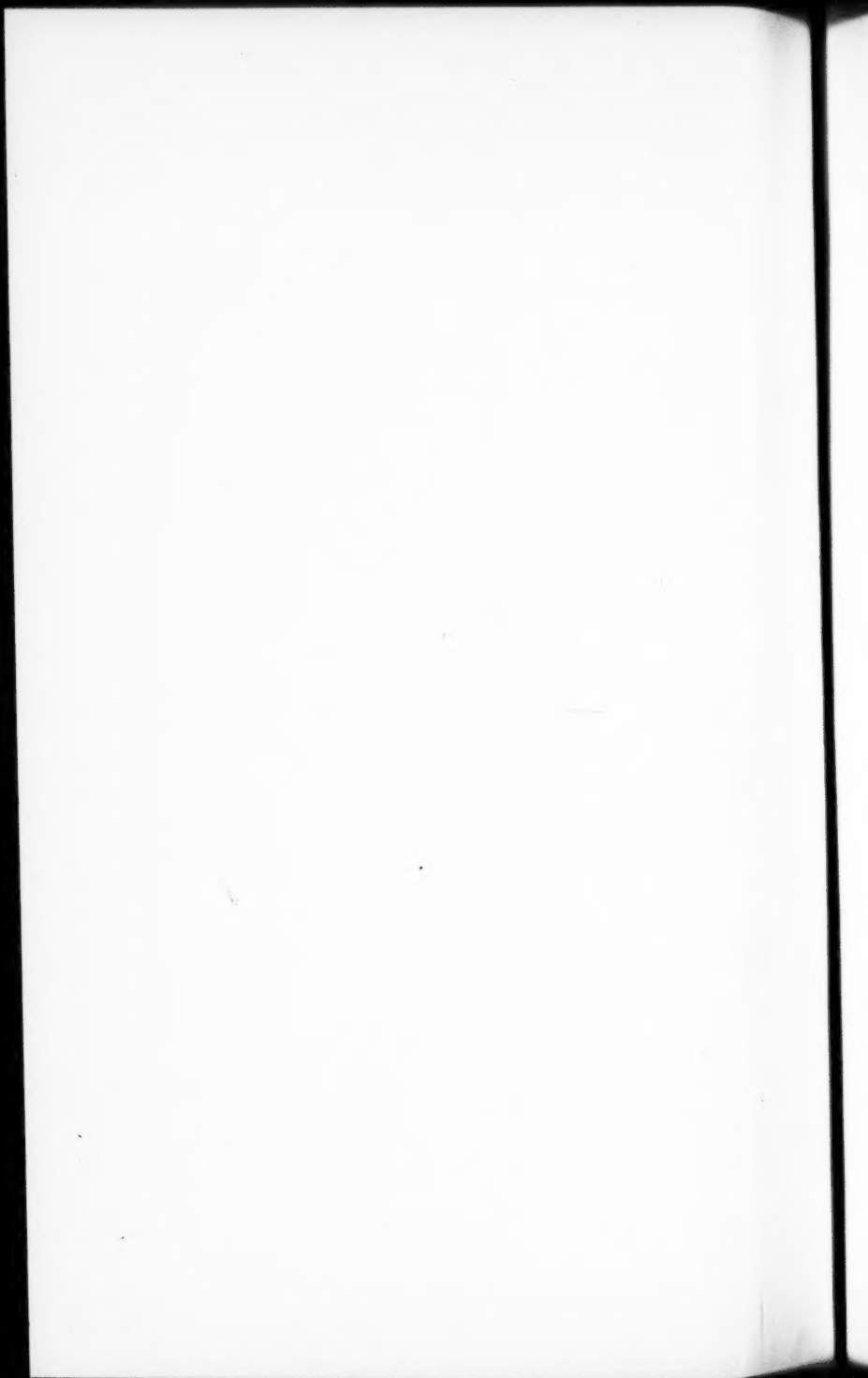
Finished material and supplies for military use

Communications supplies  
Raw products for industry and other facilities  
Agricultural requirements and supplies  
Supplies for governmental needs other than military  
Supplies required by the civilian population.

(12) JAPAN ALS VORKÄMPFER DER ASIATISCHEN MONROEDOKTRIN.  
[Japan as champion of the Asiatic Monroe Doctrine.] Ostwald

Since the successful war against China, Japan has steadily risen to a world power and recently declared herself the champion of the doctrine of Asia for Asiatics, or an Asiatic Monroe Doctrine. The author describes Japan's strategic plans whereby she has gradually encircled China on the north by the seizure of Manchuria and Jehol in order to increase her field of operations in the event of hostilities with Russia and to secure essential raw products. To protect her western flank, her military group had advocated the seizure of all territory south to the Yellow River. This did not fully materialize because of political reasons and only the Chachar and Hopei provinces were affected, becoming autonomous states under Japanese domination. The military group then directed their attentions to Inner Mongolia and established themselves there and closed the caravan routes through Kalgan which led from Soviet Russia to North China.

Japanese encroachment on Outer Mongolia has been frustrated by Russia who pledged her assistance to that province in 1924. The author states that opposition by America and England, both of whom were commercially interested in China, has not crystallized, both being too preoccupied with affairs of their own. The psychological moment having arrived, the author states the Japanese seized the opportunity for unobstructed expansion.



## Section 5

# Academic Notes

THE COMMAND AND GENERAL STAFF SCHOOL

---

REPRINT OF CURRENT SCHOOL MATERIAL, WHICH AFFECTS  
INSTRUCTIONAL PROCEDURE OR TACTICAL DOCTRINES

---

### Instructional Organization

---

#### *Commandant*

BRIGADIER GENERAL C.M. BUNDEL, U.S. ARMY

#### *Assistant Commandant*

COLONEL J. A. McANDREW, Infantry

#### *Naval Adviser*

CAPTAIN A. STATON, U. S. Navy

#### *Secretary*

LIEUTENANT COLONEL F. GILBREATH, Cavalry

#### *Directors*

Regular Class-----LIEUT. COLONEL T. LAWRENCE, Inf.  
Special Class and  
Extension Courses-----LIEUT. COLONEL J. B. CRAWFORD, C.A.C.

#### *Chiefs of Sections*

I. Offensive Operations-----LIEUT. COLONEL H. F. HAZLETT, Inf.  
II. Intelligence and History---LIEUT. COLONEL K. G. EASTHAM, Cav.  
III. Defensive Operations-----LIEUT. COLONEL H. L. C. JONES, F.A.  
IV. Supply and Logistics-----LIEUT. COLONEL T. K. BROWN, Cav.  
V. Miscellaneous-----LIEUT. COLONEL S. J. HEIDNER, Inf.



## CONTENTS

	Page
General Terrain Exercise No. 11 .....	152
General Terrain Exercise No. 12 .....	176

## General Terrain Exercise No. 11

[9 June, 1936]

	Paragraphs
SECTION I.—Situation and Requirement .....	1-3
II.—A. Solution .....	4
III.—Discussion .....	5-13

## SECTION I\*

## Situation and Requirement

	Paragraph
General situation .....	1
Special situation (Blue) .....	2
Requirement .....	3

1. GENERAL SITUATION.—*a. Maps.*—Special Map A with Section I and Overlay No. 1 with Section II.

*b. Boundary between main forces.*—The Missouri River is the boundary between two states, Red west, Blue east.

*c. Concentrations.*—War has just been declared and large concentrations of Red forces are known to be taking place in the general vicinity of Troy (eight miles due west of Wathena), Horton (twenty-three miles due west of Doniphan), and Valley Falls (twenty-five miles due west of Fort Leavenworth). The Blue I Corps (less 1st Division) is completing its concentration in and around Excelsior Springs (thirty miles due east of Platte City). The bridges at Fort Leavenworth and Leavenworth are held by Blue.

*d. Organization.*—Red and Blue organizations are similar. Blue has air superiority. Both Red and Blue air

\*To be issued at road bend 400 yards northwest of road junction 611-J, upon arrival at that point. (Note: The class was in camp near road junction 806-J, east of Woodruff. It was taken on horseback via road junction 708-J—road junction 610-J—New Market, to point of issue.)

forces are engaged on strategic missions and are not available for combat missions in this area.

2. SPECIAL SITUATION (BLUE).—(Special Map A)—*a. The 1st Division.*—The 1st Division, with normal reinforcements, Major General A commanding, completed its concentration by daylight, 9 June, with leading elements along Bee Creek from Faucett to Woodruff.

*b. Mission of the 1st Division.*—The 1st Division has the mission of advancing on the line: Rushville—north end of Bean Lake and preventing the crossing of Red forces via the Atchison Toll Bridge.

*c. Developments to date.*—(1) Covered by its cavalry, the 1st Division marched west at daylight, 9 June. Armored cars, sent to reconnoiter the bridges at St. Joseph, reported at 5:30 AM that they were unable to enter that city due to defended road blocks.

(2) By 6:00 AM the 1st Squadron 1st Cavalry, reinforced, reconnoitering toward the Atchison Toll Bridge, reported that it had been stopped by Red covering detachments along the general line: Contrary Creek—Sugar Creek, and was unable to advance.

(3) The hostile situation was promptly developed by the 1st Division, resulting in a defensive position, apparently held by a Red reinforced brigade, with intrenchments located as shown on Special Map A.

(4) Major General A withdrew his cavalry to the north with the mission of protecting his right flank and of delaying any Red advance to the south or southeast from St. Joseph.

(5) At 2:00 PM the 1st Division launched an envelopment against the DeKalb Red position with the main attack made by the 1st Brigade (1st Infantry on the right) in the direction shown on Special Map A.

(6) From Blue civilians in St. Joseph the armored cars learned that a squadron of Red cavalry, which had arrived during the night 8-9 June, was defending the road blocks covering the entrances to that city.

*d. Supply provisions.*—(1) The railhead and refilling point of the 1st Division are at Camden Point. The daily train arrives at 11:00 PM.

(2) Field and service trains are bivouacked in the vicinity of the railhead.

(3) The Commanding Officer, 1st Quartermaster Regiment, has been notified by Major General A to have available at Camden Point on three hours notice trucks to move one infantry regiment, less a battalion (less animals and machine-gun carts) and one reconnaissance detachment, or its equivalent.

*e. Situation at 6:30 PM, 9 June.*—(1) The 1st Division has succeeded in driving the Red brigade north of the North Branch Sugar Creek. No medium howitzer fire has been received from Red.

(2) The elements of the division are located as shown on Special Map A and are still attacking. The armored cars of the 1st Squadron 1st Cavalry, reinforced, are observing all main roads leading out of St. Joseph to the east, southeast, and south.

(3) The 901st Observation Squadron, operating from its airdrome at Plattsburg, Missouri (thirty-five miles due east of Atchison), with an advanced landing field near the division command post, reported that a Red force estimated as a division, which it had been observing all day, arrived in St. Joseph after a forced march and was closing up and going into bivouac at 6:30 PM. This was confirmed by G-2 agencies.

(4) Blue observation aviation reported that there were no Red troops in the Atchison area.

(5) Major General A had planned to continue the attack this afternoon, maintain contact during the night 9-10 June, and continue the attack again at daylight, 10 June.

(6) The following message was received from the I Corps at 6:30 PM, 9 June, by Major General A:

"Delay the Red forces now west of the PLATTE RIVER, withdraw to the east bank of the PLATTE RIVER between LITTLE PLATTE RIVER and UNION MILLS S.H. (inclusive) one mile west of EDGERTON, and cover the advance of the remainder of the I Corps which will arrive on the line of the PLATTE RIVER north of UNION MILLS S.H., beginning at dark on the night of 13-14 June. Corps cavalry will cover the PLATTE RIVER south of the LITTLE PLATTE, commencing at daylight, 13 June."

*f. Partial decision of Major General A at 6:45 PM, 9 June.*—At 6:45 PM, 9 June, Major General A, in compliance with the 6:30 PM instructions of the I Corps, decided in part as follows: to discontinue the present attack and that planned for daylight, 10 June, to withdraw from action commencing at dark tonight, and to delay the Red forces.

3. REQUIREMENT.—*a.* Show on Special Map A, as of daylight tomorrow morning (10 June), the following with respect to elements of the 1st Division:

(1) The general location of all *tactical* units (less signal corps troops and the 901st Observation Squadron, Separate), the size of a battalion or larger.

(2) The general location of any *separate* detachments.

NOTE: Where a battalion is a part of a larger tactical unit and occupies the same general area as the larger unit, indicate *only* the general location of the larger unit. If any tactical unit or separate detachment is en route at daylight show the general location of the heads of columns.

*b.* Using a terrain pad, state *briefly*:

(1) The mission assigned to each unit in *a* (1) and (2) above, and of the 901st Observation Squadron, Separate.

(2) Reasons for the dispositions ordered for the 1st Division, and the general plan of Major General A for the future employment of the division to meet the Red capabilities and to carry out the instructions of the I Corps commander.

## NOTES

1. Solutions will be turned in at road bend 400 yards northwest of road junction 611-J by 12:00 noon.

2. Entering of private property is prohibited.

3. Sunrise is at 4:55 AM; sunset is at 7:40 PM.

4. The number of trucks required to move elements of the division which students may want to use in lieu of the 36 trucks allotted to one reconnaissance detachment are:

Each engineer demolition detachment—one.

Infantry rifle company—fourteen.

Machine-gun company (less animals and carts)—nine;  
machine-gun platoon—three.

Howitzer platoon—two.

Military police company—seven.  
 Engineer battalion—eighteen.  
 Headquarters and headquarters company infantry brigade (less animals)—five.

## SECTION II A Solution

A solution ..... Paragraph 4

4. A SOLUTION.—*a. The general location of all tactical units (less signal troops and the 901st Observation Squadron, Separate) the size of a battalion or larger, and of any separate detachments.—See Overlay No. 1, herewith.*

*b. The mission assigned to each tactical unit or separate detachment named in a above, and the 901st Observation Squadron, Separate.*

(1) *Wallace covering force.*—Hold the reinforced Red brigade west of position shown on Overlay No. 1 until further orders.

(2) *Covering force ("shell") left in contact.*—Maintain contact with hostile front-line units during the night, simulate normal activity all along the front of the division, and withdraw independently under control of local commanders at 3:30 AM, 10 June, and rejoin units.

(3) *Garrettsburg covering force.*—Resist the advance of any Red force east or southeast over the Platte River south of Highway 36, inclusive, and north of Agency, exclusive.

(4) *1st Squadron 1st Cavalry, reinforced.*—Report direct to 1st Division headquarters, to the headquarters of each covering force, and to the flank guard (or outpost) any movement of Red columns from St. Joseph, maintain contact with the interior flank of the Garrettsburg and Wallace covering detachments, and delay the Red forces north of the general line: Agency—Sparta S.H. until daylight tomorrow morning.

(5) *901st Observation Squadron (Separate).*—Maintain surveillance of the St. Joseph Reds and of any other Red forces moving from the concentration areas toward St.

Joseph or Atchison, reporting direction and composition of all movements direct to the cavalry, to the flank guard (or outpost), to the headquarters of the Garrettsburg and Wallace covering detachments, and to division headquarters; and be prepared to perform battle missions.

(6) *Flank guard (or outpost).*—Prevent the enemy from surprising or bringing fire upon the main body during the march (or bivouac).

(7) *Division reserve.*—In bivouac, prepared to move to reinforce the Garrettsburg covering force, or to extend the delaying position of the Wallace covering force. Reconnoiter for delaying positions west of the Platte River along the general line: McGauhey S.H.—Faucett—Taos; and east of the Platte in the vicinity of Malden Creek northeast of Frazer S.H.

(8) *910th Infantry (L of C), reinforced.*—Protect the supply installations and their bivouacs in the vicinity of Camden Point, and the delivery of supplies to the division.

(9) *Platoon, Battery F 104th Coast Artillery (AA).*—Give antiaircraft protection to rear establishments in vicinity of Camden Point.

*c. Reasons for the dispositions ordered for the 1st Division, and the general plan of Major General A for the future employment of the division to meet Red capabilities and to carry out the instructions of the I Corps commander.*—Because of the capabilities of the two Red forces, the uncertainty of hostile action, the distance which separates the Red threats, the inferior strength of the Blue force, the necessity for holding Red west of the Platte River, south of Castile Creek, for a considerable period of time, and the limited space in which this delay must be executed, Major General A cannot use the bulk of his force to delay either one of the major Red threats, yet he must meet both.

The Red reinforced brigade must be kept from advancing and thus restricting the maneuver or the withdrawal of the mass of the 1st Division; and the advance of the mass of the Red division must be canalized, if possible, west of the Platte River. If this is impossible, then the 1st Division must be able to maneuver against Red east of the Platte and if practicable, north of Castile Creek.

Since the Red units are separated at the present time by about twelve miles their delay calls for two separate

covering forces, each comprising a well balanced combat team of great delaying power. For this reason any plan adopted by Major General A should initially decentralize the performance of those delaying missions at the same time planning to resume control when Red has committed the bulk of his force to a definite line of action.

Major General A must also keep in mind that either or both of the Red forces now east of the Missouri River may be reinforced by other Red troops moving from the concentration area. Although Blue aviation has reported no troops in the Atchison area, it is a short run for motors from any of the Red concentration areas; and Red may move troops to reinforce either the St. Joseph division or the DeKalb reinforced brigade.

The uncertainty of Red action dictates that as large a general reserve as possible be held out as a maneuvering mass in this situation. This reserve may have to be moved to the east of the Platte River to delay and block an envelopment of the north flank—which is the most serious action the Red force in St. Joseph could take; it may have to delay a movement of the Red division straight to the south, or, if Red regroups his forces and attempts an envelopment from the southwest, the reserve must be able to meet that threat. In any event it may have to fight on one position for more than one day in order to gain the necessary delay. It may even have to counterattack. If the Red brigade moves north to join the Red division, it is a threat against the flank.

While disposing the main forces as indicated, Major General A must take every step possible to gain information of the probable action of the hostile forces; he must make provision for the security of his flanks; for his rear installations; and provide a covering force or "shell" from troops now in contact in the attack, so that the division may be withdrawn as secretly as possible and marched to its new locations.

Depending upon the line of action taken by Red, the 1st Division must maneuver on successive delaying positions, and hold Red west of the Platte River for two days and if possible three before withdrawing to a final position behind the Platte.



If the Red force now in St. Joseph moves south or southwest, the division can hold a first delaying position, along the general line: road junction 412-J—road bend just south of road junction 318-J—just north of Faucett—just north of Taos—road junction 549-H—road junction 547-H—road junction 545-H—road junction 658-H—Burrus S.H., the exact location depending upon the direction of attack. Second delaying position: high ground southwest of road junction 521-J—Arnoldsville S.H.—Dearborn—east of Bee Creek as far south as Flintlock Ch. Third delaying position: high ground just south of road junction 640-J—road junction 636-J—behind Holland Creek to road junction 723-J—east of Jowler Creek as far south as the Chicago Rock Island and Pacific R.R. Final position—east of Platte River.

If the mass of the Red force moves east and is successful in forcing a crossing of the Platte and Third Fork, the bulk of the 1st Division will have to delay along a general line: Holmes S.H.—Frazer S.H.; then behind Malden Creek and its tributaries, pivoting on its left and withdrawing behind Castile Creek, and then successively south to the general area indicated by the corps. Such action, if followed up by Red, would subject his force to an attack in flank by the elements of the I Corps arriving on the night 13-14 June.

Whatever the final scheme of maneuver, Major General A must be prepared to detach covering forces to protect his flanks.

### SECTION III

#### Discussion

	Paragraph
Purpose .....	5
Situation at 6:30 PM, 9 June .....	6
Analysis of plans open to Red .....	7
Mission of the 1st Division .....	8
Influence of the terrain .....	9
Analysis of plans open to Blue .....	10
Plan of Major General A .....	11
Missions of tactical elements of the 1st Division .....	12
Reasons for dispositions ordered and general plan for future employment of the 1st Division .....	13

5. PURPOSE.—The purpose of this terrain exercise is to illustrate the maneuver of the elements of a division in

a delaying action where the division must gain time for a considerable period, while faced with threats from two different directions by an enemy now estimated at about one and one-half times Blue strength and which may be later reinforced.

6. SITUATION AT 6:30 PM.—a. At 6:30 PM, 9 June, the 1st Division is attacking and is having considerable success against a Red reinforced brigade on a defensive position near DeKalb, when information is received that a Red division is going into bivouac with heads of columns near the southern and eastern exits of St. Joseph.

b. At that same hour, Major General A receives a message from the I Corps commander to withdraw to the east bank of the Platte River between the Little Platte and Union Mill S.H., delay the advance of the Red forces now west of the Platte River, and cover the advance of the remainder of the I Corps which will arrive on the line of the Platte River north of Union Mill S.H. on the night of 13-14 June.

7. ANALYSIS OF PLANS OPEN TO RED.—a. Red probably does not know the original mission of the 1st Division or the change in its mission which has been made by the I Corps.

b. The Red brigade commander undoubtedly knows of the arrival in St. Joseph of the Red division and he may expect that the location of that division will force a withdrawal of the Blue division now opposing him on the night of 9-10 June. He must also anticipate a continuance of the attack by the 1st Division tomorrow morning.

The Red brigade may act on any of the following lines:

- (1) Remain on the defensive.
- (2) Follow up any withdrawal of the 1st Division as soon as discovered and attempt an envelopment of same.
- (3) Move north to join the Red division.

c. The Red division, after a forced march, can move again at 12:30 AM, 10 June. Such a plan is improbable because the commander has not yet sent his cavalry out to reconnoiter or to contact the Blue cavalry but has been content to block entrance to the city of St. Joseph. In this situation, little progress could be made by the Red division operating during the night against an active and aggressive reinforced squadron of Blue cavalry.

Any advance by the Red division is limited to the following:

(1) Move directly south or southwest in order to come quickly to the assistance of the Red brigade and operate against the flank and rear of the 1st Division.

(2) Move to the east or southeast in a wider flanking movement against the 1st Division. The wider the flanking movement the more time he will consume in marching.

(3) Move a reinforced brigade either according to plan (1) or (2) and the remainder of the division the alternate direction.

(4) His mission may be fulfilled if he moves only far enough out to take up a defensive position which will secure a bridgehead at St. Joseph.

(5) If the Red division moves against the 1st Division either south or southeast it will necessitate a withdrawal of the 1st Division from its present position. If Red is seeking a bridgehead he will probably attempt to get beyond the line of the Platte River and Third Fork.

d. Finally, either or both of the Red units now east of the Missouri may be reinforced.

8. MISSION OF THE 1ST DIVISION.—a. The mission of the 1st Division requires, after withdrawal from action tonight, to delay the Red forces without any reinforcements for four days (the 10th to 13th incl) and four nights (the 9th to 12th incl) inasmuch as the remainder of the corps will not start to arrive until after dark on the 13th. Blue cannot be expected to hold the final position behind the line of the Platte for a longer time than the 12th and 13th, especially when the river is not in flood, and therefore his plans must insure him holding Red west of the Platte and north of Castile Creek, for at least two and preferably three days.

b. The corps commander did not inform Major General A when he is to withdraw or how he is to accomplish his new mission. Major General A has decided rightly to wait until dark to make his withdrawal—a daylight withdrawal should be executed only as a last resort in a desperate situation to save the command from annihilation. A night withdrawal will give him time to get out a proper withdrawal order and assign missions to the various units of the command. But *where* to withdraw and *how* to maneuver his

forces so as to gain the time necessary present many problems.

9. INFLUENCE OF THE TERRAIN.—The main obstacles in the area in which Blue is particularly concerned are: the Platte River with its tributaries east of St. Joseph, the Hundred and Two River and Third Fork; Malden Creek; Castile Creek; the Little Platte. West of the Platte are Bee Creek and Jowler Creek with their main ridge lines which generally run perpendicular to the direction of withdrawal. But the small tributaries of these streams and their corresponding ridge lines extend generally parallel to the general direction of withdrawal and offer a number of suitable positions for delaying actions for Blue as well as avenues of approach for Red.

The terrain between the main ridge lines is broken and partly wooded lending itself to local delaying actions. There are no dominating terrain features affording extensive observation over a large area, and there is no great difference in elevation between the principal ridges, although Red has a slight advantage in this as he will be advancing down the ridges and valleys.

10. ANALYSIS OF PLANS OPEN TO BLUE.—*a.* Shall Major General A withdraw to a single position and attempt to gain the necessary time?

He cannot hope to accomplish his mission by such a decision. A determined defense in one position, providing such a position could be selected, will not gain the required time because Red has freedom of maneuver. No position can be selected west of the Platte River that does not have insecure flanks; and Red can make a coordinated attack against any such position with all of his forces at will and with his mass on either flank.

If he takes up a river defense behind the Platte, or makes his dispositions using the river only as an obstacle, he must dispute a crossing on a front that extends from east of St. Joseph to the Missouri River—a greater front than can be effectively held by one division when the hostile forces have time and room to maneuver. Any position south of the Little Platte allows Red to cross his division over the Platte and Third Fork and maneuver from the north on the east side of the Platte, while containing the 1st Division frontally with the Red brigade.

A delaying action is a maneuver to gain time if possible without fighting a decisive battle on one position and subjecting the command to heavy losses in men and matériel. In this situation the command should occupy key terrain features or be placed in localities which will be a threat to the hostile force and thus compel delay and retard his advance so that he cannot reach a given locality prior to a certain date.

b. Shall the bulk of the 1st Division be placed east of the Platte River and north of Third Fork with the idea of defending along the Platte against the movement of the Red division to the east?

This plan would be effective *if* it could be determined that the Red division will move in that direction. In any event a considerable force must be left to the west of the Platte to take care of the Red brigade. Such a plan might therefore widely separate the main elements of the division and has the danger of allowing the Red division to move to the southeast, separate the Blue division and defeat it in detail.

c. Shall the Blue commander place the bulk of his force west of the Platte River with a plan of delaying in successive positions?

Such a scheme of maneuver has the advantage of concentrating the mass of the division in one general area and Major General A would probably be able to hold off the Red brigade and at the same time delay the Red division—*providing* the Red division moves directly south or southwest. But if it moves directly east or to the southeast from St. Joseph the moment Red crosses Third Fork or the Platte River any one of the several possible delaying positions west of the Platte will be outflanked; and the 1st Division will have to withdraw at once to the east bank of the Platte for its final position, which in turn is liable to attack from the north flank as well as from the south flank.

In order to have a delay in successive positions on previously selected terrain features west of the Platte River (either by placing the bulk of the division on one position or by occupying two positions simultaneously) a correct solution, the total amount of delay necessary should be such as to make any other plan of operations impracticable; and the position or positions selected should be such that the

enemy must attack them frontally. If he can march around any position selected, or if he can attack it in flank, the tactical disposition is faulty—unless the march which the hostile force will have to make is of such a length as to consume all of the time necessary for delay. Such is not the case in this situation. Furthermore any position selected north of the general line: McGaughey S. H.—Faucett—Taos, throws the left flank and rear of the division open to an attack by the Red brigade, unless very strong forces are left on the Wallace position to take care of that threat; and this can not be done if the 1st Division is also to withstand an attack by a division on its front. The definite selection of any delaying positions at this time commits Major General A to a particular line of action too far in advance; and he may therefore issue orders which may later have to be changed.

*d.* Shall Major General A plan to contain the Red brigade with a part of his force, send a strong detachment to prevent or delay the crossing of the Platte east of St. Joseph, attempt to canalize Red west of the Platte, and hold the balance of the division in reserve as a maneuvering force?

In view of the strength that is against him he must utilize all the means at his command as well as make the best adaptation of the terrain to accomplish his mission. The smaller the force available for delay, or the more inferior our force, the more necessary it is to maneuver. The wider the front from which threats may come and the more uncertainty as to the hostile line of action, the more necessity for a large reserve centrally located to meet those threats. The necessity for conservation of the ability of the command to maneuver must be kept constantly in mind in this situation. The maximum of delay will be secured by keeping the enemy in the dark with reference to the location of defensive positions and the mass of the division, by forcing him to deploy, to maneuver, to reconnoiter, to prepare for an attack on a position, to follow up a withdrawal, and then proceed all over again.

11. PLAN OF MAJOR GENERAL A.—Major General A therefore decides to adopt the plan outlined in paragraph 10 *d* above—contain the Red brigade with a strong covering force operating in the vicinity of Wallace, send another strong covering force to the general area of Garrettsburg

to prevent the crossing of the Red division over the Platte east of St. Joseph, and to hold the division, less detachments, in reserve centrally located to move either to the assistance of the force blocking the movement of the Red division east or southeast from St. Joseph, to go to the assistance of the Wallace covering force, or, to attack in flank, if necessary, any Red force that may be moved against either of the two Blue covering detachments. This reserve, held as a maneuvering mass, is a definite threat against the Red commander which he must meet and defeat before making any movement beyond the Platte River.

12. MISSIONS OF TACTICAL ELEMENTS OF THE 1ST DIVISION.—*a. Wallace covering force.*—This covering force should be given a mission to hold the reinforced Red brigade west of the position shown on Overlay No. 1 until further orders.

It should be a well balanced combat team sufficiently strong to accomplish its mission, which is vital to the security of the 1st Division. Although the Red brigade was being driven back at the time the attack was called off, it may be expected to follow-up on the 10th and may endeavor to maneuver around the Wallace covering force, threatening the rear of the 1st Division. There is also the possibility that this brigade may be reinforced.

Troops from the 1st Brigade sector rather than from the 2d Brigade should compose this force for the following reasons: The delaying position selected is more nearly behind the 1st Brigade; and there will be less crossing of columns during the withdrawal to the position.

Not less than one regiment of infantry, the light artillery regiment, which has been supporting the brigade, and one battalion of howitzers, should be included. A brigade headquarters should be provided to insure the necessary control and communication, and the detachment should be given antiaircraft protection with one platoon of machine guns from the antiaircraft battalion. It is preferable to assign an antiaircraft unit which is already attached to the brigade.

While it would be desirable to assign the force a mustard gas company, some engineer demolitions detachments, and an additional antitank company from the divisional antitank battalion, it is believed that these means are more



needed elsewhere. The regiment left in this force will have its own antitank company.

The delaying position selected should not be farther forward than a line running generally along the ridge through road junction 451-H—road junction 542-H, nor farther to the rear than the ridge running generally just east of Taos—through Wallace—and just east of Jordon Creek. If the position is farther west than the line indicated Red will not have to displace his artillery to attack it; and if it is much farther east, it not only gives up valuable ground and maneuver room but the terrain does not lend itself to good delaying positions until you are east of Bee Creek—and an initial position east of Bee Creek will not afford the necessary protection to the rear of the division.

The position selected gives good fields of fire for small arms at comparatively long ranges, affords considerable cover and screened routes of withdrawal, and has good observation. Provision should be made for an extension to the south to meet a possible envelopment. No extension is necessary to the north since that area is covered by the division reserve. The force is responsible for its own flank protection.

*b. Covering force left in contact.*—Withdraw independently under control of local commanders at 3:30 AM, 10 June, and rejoin units.

This covering force, or "shell", which is interposed between the units of the division initially withdrawing and the enemy in order to conceal and protect the evacuation of the position, should be shown withdrawing to rejoin its units. This force, normally consisting in a night withdrawal of small detachments of riflemen and sections of machine guns detailed from troops in contact (the equivalent of one battalion of infantry in each brigade sector), would break contact along the front at an hour designated by the division commander (usually about one-half hour prior to daylight) and would still be withdrawing at daylight. The detachments belonging to the units of the Wallace covering force would have been instructed to rejoin their units on that position, and those belonging to the division reserve would have been directed to rejoin the reserve in its bivouac area. In addition to the infantry, one light

battery would be left in each brigade sector; and they would withdraw about one-half hour before the infantry elements. The medium howitzers designated for the covering force will be able to support the shell. The detachments left in the sector of the 2d Brigade should not be attached to the Wallace covering force but should rejoin their units.

*c. Garrettsburg covering force.*—This covering force should be given a mission to resist the advance of any Red force east or southeast of the Platte River north of Agency, exclusive, and south of Highway 36, inclusive.

The enemy capability which is the most dangerous to the 1st Division, is to allow the Red division now in St. Joseph to move east of the Platte River north of Agency or east of Three Forks, thus threatening the command from the north flank. Every effort must therefore be made to force the movement of the Red division to the south; and the force that is sent to protect the northeast flank must therefore be of sufficient size to secure delay until the arrival of the division reserve, in case the Red division moves to the east or southeast, or to be a definite threat on the flank of the Red division in case it moves south. This covering force should consist of a motorized combat team of all arms, with an infantry brigade headquarters to control it. The infantry component should not be less than that now in division reserve. In addition there are sufficient trucks available to move an extra infantry rifle company and a machine-gun company (less carts and animals), and an infantry brigade headquarters, and headquarters company. It is more desirable to have these units, and especially the brigade headquarters and headquarters company, than it is to use the trucks to move a reconnaissance detachment since all of the elements of a well balanced reconnaissance detachment are included in this motorized force which is also a more powerful combat unit. The 2d Field Artillery, which has been in direct support of the 2d Brigade should be included. At daylight all of that regiment, less one battery which was left with the "shell", will be in the area indicated. To get long range interdiction early on any eastward movements one battalion of howitzers should also be assigned. This battalion would have been withdrawn shortly after dark on 9 June and will be able to arrive in the area by daylight. The infantry regiment will have its antitank com-

pany but it is believed that an additional antitank company should be provided from the division antitank battalion to protect the command post and rear of the position. Anti-aircraft protection should be provided by one machine-gun battery (less one platoon) from the 104th Coast Artillery (AA). At least half of the engineer demolition detachments in the 1st Engineers should be sent with this force to execute demolitions over the Platte River and Third Forks. At least one gas company from the 1st Battalion 901st Chemical Regiment should be included to assist in delay by the use of mustard gas, and the mustard gas truck from the battalion headquarters should be turned over to the engineers to contaminate demolitions. The truck transportation for the dismounted elements of this covering force should be kept with that force to be used to move part or all of it west of the Platte in the event that the Red division moves south, or to send to the division reserve to move additional units to the Garrettsburg area.

Reliance upon demolitions only or the cavalry squadron, which has no artillery, to stop the possible movement of the Red division to the east is not considered sufficient, unless a large mobile reserve strong in fire-power is so placed that it can be quickly sent as reinforcements.

A position in the general vicinity of Garrettsburg will block the movement of the Red division to the east or south-east and be a threat which Red must consider. If the Red division commander elects to change his direction of movement to the northeast he will consume too much time in maneuver. To move the detachment farther north along the Platte may allow the Red division to separate the two Blue forces; to move farther south would not accomplish the mission.

Major General A would undoubtedly start the movement of his motorized elements just as soon as practicable and without waiting for darkness, since the more information Red gains that a Blue force of considerable size is east of the Platte the more favorable should be the reaction as far as Blue is concerned, and the more likely is Red to move directly to the south or southwest. Unless this force is motorized it will be unable to get to a position where it will be effective or move to the west of the Platte, once it has occupied a position east of that river.

*d. 1st Squadron 1st Cavalry, reinforced.*—The 1st Squadron 1st Cavalry, reinforced, should be ordered to report direct to division headquarters, to the headquarters of each covering force, and to the flank guard (or outpost) any movement of Red columns from St. Joseph, maintain contact with the interior flank of the Garrettsburg and Wallace covering detachments, and delay Red forces north of the general line: Agency—Sparta S.H. until daylight 10 June. While some provision should be made to delay the Red force if it moves south from St. Joseph, it is not believed that this force should be as strong as the one sent to the east of that city for the reason that it is more desirable from the viewpoint of the 1st Division to have Red move south than it is to allow him to move east. If the bulk of the command is placed north of the line indicated in paragraph 10 c, sufficient force is not available to protect the flanks and rear.

The most important mission for the cavalry is to keep contact with the Red forces now in St. Joseph and secure information of their movements, particularly through the use of armored cars working on the east, southeast, and south, because the entire future action of Major General A depends upon information of the direction of movement of the Red command and of the composition and strength of the forces. The next priority is to maintain liaison and cover the gap between the two Blue covering detachments. This mission may include the delay of any Red forces for a sufficient period of time to allow the outpost to get into position and erect road blocks and barricades. While the Red division is not expected to move its mass during the hours of darkness, the commander may attempt to send out small cavalry or motorized parties.

Additional delay can be secured by the cavalry through the use of the engineer demolition detachments. All of the engineer demolition detachments not attached to the Garrettsburg force and a minimum of four should be attached to the 1st Squadron 1st Cavalry to execute demolition in the area south of St. Joseph.

While it would be desirable to attach a gas company, it is believed that this means is more vitally needed with the Garrettsburg covering force.

There is no need for reinforcing artillery with the cavalry since the artillery with the Garrettsburg covering force can reach well out to cover the threat toward the east, and the light artillery with the outpost (or the flank guard) and the medium howitzers with the reserve can be placed in position for interdiction missions. If the Red division moves south, part or all of the 2d Field Artillery, now with the Garrettsburg force, can also be moved at once to reinforce the troops covering the delaying position.

The cavalry should be directed to report all movements to the division headquarters, to the headquarters of each of the covering forces and to the flank guard or outpost. It should not be attached to either covering force at this time because Major General A may want to attach it later to support either one of the forces, use it on a flank, or continue to use it independently on missions between the two forces.

*e. 901st Observation Squadron (Separate).*—The observation squadron should be directed to maintain surveillance of the St. Joseph Reds, and of any movement to St. Joseph or Atchison from the concentration areas reporting direction and composition of all movements direct to the cavalry, to the flank guard (or outpost), to the headquarters of each of the covering forces, and to division headquarters; and be prepared to perform battle missions. The air service and the cavalry must work in close liaison to determine the vital information as to what direction the Red force in St. Joseph will take. It is important that each of the headquarters named be furnished with this information. Inasmuch as the St. Joseph Reds will probably gain contact with elements of the 1st Division during the day, and the DeKalb Reds may operate against the Wallace covering force, the division aviation should be prepared to perform battle missions.

*f. Flank guard, outpost, and rear guards.*—Although the cavalry is covering the division from the north, no units should be marched to the rear from the DeKalb sector without the additional protection of a flank guard; and after arrival in any area the command should be protected by an outpost. The commander of any marching body of troops must always take positive action to insure the security of the command from flank attack, or, to assure that a halted

command is secured by forces so posted as to be able to warn the command and gain sufficient time for it to prepare for action.

If a tactical unit of the division is halted at daylight, 10 June, an outpost should be provided; and if it is marching, a flank guard should be detailed to protect it. In either case an appropriate mission should be given to the security force.

In this situation Major General A takes the 1st Battalion 3d Infantry (less Companies C and D), which has been the reserve of the 2d Brigade and can be moved at once to position, and Company B 1st Antitank Battalion as a flank guard. By daylight it has been reinforced with one battery from the 2d Field Artillery, and has established an outpost. This type of duty is very fatiguing, the command as a whole needs rest, and for these reasons the strength of such detachments should be held to the minimum. Artillery can be of little use during the night march of the flank guard, but it may be needed after daylight. The battery which has been left in the sector of the 2d Brigade with the "shell", and which would have been withdrawn about 3:00 AM, is the logical battery to attach to this force.

The infantry companies will guard road blocks on all roads and approaches in the area indicated with small detachments; and antitank defenses inside the road blocks will be provided by the coordination of antitank weapons and field artillery. If necessary, the outpost can be reinforced by other elements from the reserve. It is not believed that an antitank company is of sufficient strength in itself to provide flank protection for the command.

In addition to flank guards, any marching unit should have its own advance and rear guards. The rear guards are especially important in this situation, and they should be of a strength commensurate with the size of the probable Red threat. The position selected for these units will depend upon the location of the main body.

*g. Division reserve.*—The 1st Division, less detachments, should be held in reserve in a central location as a maneuvering mass prepared to move to reinforce the Garrettsburg covering force in case the bulk of the Reds move east or southeast, or to extend the delaying position of the



Wallace covering force, east of Taos, in case the St. Joseph Reds move to the south or southwest.

Orders should be issued for the division to reconnoiter a delaying position west of the Platte along the general line: McGauhey S.H.—Faucett—Taos; and another delaying position east of the Platte in the vicinity of Malden Creek north-east of Frazer S.H. Additional delaying positions which might be reconnoitered at this time are along the south bank of Castile Creek, and along the general line: Arnoldsville S.H.—Dearborn—east of Bee Creek as far south as Flintlock Ch. The movement of Red is too undetermined to definitely select these last positions, or other delaying positions.

While in some situations it is considered that when a division occupies two delaying positions simultaneously, the troops on the second position may be considered as a reserve, it is not believed that such a solution is sound in this situation. The occupation of *any delaying position* is believed to be faulty for the reasons given in paragraph 10 c; and if troops were placed on a second position with the idea that they may later be used as a reserve, it will only add to their further fatigue.

By daylight, 10 June, the units assigned to the division reserve should be arriving in the general area indicated on Overlay No. 1, or some other such area an equal distance from the front line of the night before. The general area to which the reserve should be moved is determined by two considerations:

(1) The distance that it can be marched during the hours of darkness, after it has been withdrawn from action.

(2) The necessity for preserving freedom of maneuver for the reserve.

Withdrawal of front-line units will normally not start until shortly after dark, probably not earlier than 9:00 PM. It will take a *minimum* of two and one-half hours for units (other than the covering forces which are left as a shell) to withdraw from contact and reach their battalion assembly areas. It will therefore be around 11:30 PM at the earliest when the command is ready to form march columns on roads and start to the rear. It is daylight at 3:55 AM which gives about four and one-half hours of marching time; and at two miles an hour the brigade will be able to march only about nine miles. Even assuming that it could march farther it



would not be wise to march east of the Platte for the reason that the troops are tired, and it is also better placed where it is. If Red marches east, the reserve can continue northeast, while if it was west of the Platte, and Red marches south, the reserve would have to countermarch.

A position in the general area of Agency is believed to be too far north. While it would give the advantage of additional delay *if* the Red division moved south, it might limit freedom of maneuver of the reserve if it had to make a flank march to reinforce the Garrettsburg covering force. It should be so placed as to be able to make use of the bridges at Mathey's Mill and just east of road junction 413-J in case a movement east of the Platte is necessary. A position farther to the south would be too far away.

It is believed that the infantry component with the maneuvering mass should be half the infantry strength of the division, since anything less than that is not of sufficient size to constitute an effective combat unit against a hostile force the size of the Red command. The infantry regiments with the reserve will have their own organic antitank companies which can be used to protect the bivouac area in conjunction with the artillery. The 1st Antitank Battalion, less Companies A and B, will also be in the reserve. It is believed that it is more important to detail the companies to the areas indicated than it is to use them as additional protection for the bivouac area.

The 1st Field Artillery Brigade Headquarters and the 3d Field Artillery, less two battalions, are also in reserve.

By holding one battalion of medium howitzers with the reserve, it can be moved quickly into position behind the outpost line to interdict if Red moves south; and if the Red division moves east the howitzers can be moved to reinforce the battalion now with the Garrettsburg covering force. To put two battalions of howitzers with the Wallace covering force would have the advantage of being able to move them to support the Faucett extension but such a location would be too distant to move quickly to support positions east of the Platte River. If all of the medium howitzers are attached to the Garrettsburg covering force, they are too far away to move easily into positions suitable for interdicting Red movements straight to the south. No light artillery should

be held in reserve, as it is all needed with the covering and security forces.

The 2d Battalion 104th Coast Artillery (AA), less detachments, should be used to give the reserve protection against hostile observation aviation, since it is highly desirable that the Red commander not know of the location and general size and composition of the reserve. The gun battery may not be sufficient to limit this observation, and so Battery E (machine-gun), less one platoon, is included.

Since there are no definite missions at this time where smoke companies of the 1st Battalion 901st Chemical Regiment can be used they should be kept in reserve with the battalion headquarters, rested, and made ready to move when needed.

The tank company should also be held in reserve inasmuch as the reserve may have to be used to counterattack.

By holding the 901st Balloon Squadron in reserve it can be moved to observe for the division on the particular front which is threatened after Red is committed to a definite line of action. While it would be desirable to have a balloon in ascension with either of the covering forces, such action might result in not having this observation available on the critical front at the critical time.

The 1st Engineers, less demolition detachments with the covering forces and detachments that are engaged on necessary road work, should be included in the reserve, as there are no other urgent missions which demand their assignment and it is necessary for the troops to get as much rest as possible. In an emergency the engineers can be used as combat troops with the maneuvering mass.

*h. Protection for rear establishments.*—The 910th Infantry (L of C), reinforced, and the one platoon of Battery F 104th Coast Artillery (AA) now protecting the rear establishments in the vicinity of Camden Point should continue on their present missions since the establishments there have not been moved.

*i.* The requirement calls for the location of all tactical units the size of a battalion and larger, and of all separate detachments regardless of size as of daylight the morning of 10 June. To show such units behind the Platte River as of daylight, 10 June, or at any distance greater than about nine miles from their original locations, indicates a lack of

appreciation of time and space factors, as discussed in paragraph 12 *g* (1) and (2) of the many actions and orders necessary in a withdrawal from action, and of the physical capabilities of troops which have been attacking and whose endurance is already taxed to the utmost.

*j.* Although the attack of the 1st Division has threatened the line of communications of the Red reinforced brigade and has opened the way to the eastern end of the Atchison Toll Bridge, it is not believed sound to send any force from the 1st Division to seize the bridge. In the first place it is undoubtedly guarded by Red troops; and since the 1st Division has been ordered to withdraw any force sent may be completely destroyed by the Red reinforced brigade or by other Red troops.

13. REASONS FOR DISPOSITIONS ORDERED AND GENERAL PLAN FOR FUTURE EMPLOYMENT OF THE 1ST DIVISION.—The brief statement of the general purpose of the dispositions ordered for the 1st Division and the general plan of Major General A for employing the division to carry out the orders of the I Corps commander, should include the principal reasons given in the solution to that part of the requirement, in paragraph 4 *c*.

## General Terrain Exercise No. 12

[9 June, 1936]

	Paragraphs
SECTION I.—Situation and First Requirement .....	1-3
II.—Special Situation (Blue), Continued, and Second Requirement .....	4-5
III.—A Solution of Second Requirement .....	6
IV.—Discussion .....	7-9

## SECTION I\*

## Situation and First Requirement

	Paragraph
General situation .....	1
Special situation (Blue) .....	2
First requirement .....	3

1. GENERAL SITUATION. — *a. Maps.* — General Map, Leavenworth (1925), 1 inch = 5 miles. Special Map A, herewith.

*b. Opposing main forces.* — Missouri (Blue) and Kansas (Red) are at war with main forces in contact south of Kansas City. Blue army cavalry holds the bridges at Leavenworth and Fort Leavenworth and the east bank of the Missouri River between Fort Leavenworth and Kansas City, both inclusive.

*c. Aviation.* — Opposing air forces are fully occupied elsewhere; Blue has secured air superiority.

2. SPECIAL SITUATION (BLUE). — *a. The 1st Division.* — The 1st Division, reinforced, has advanced west from its concentration area by night marches.

*b. Mission of the 1st Division.* — The mission of the 1st Division is to prevent the crossing of Red forces over the Missouri River bridges at St. Joseph and Atchison.

*c. Events prior to daylight 9 June.* — Immediately following the beginning of hostilities Blue and Red frontier detachments seized, respectively, the east and west ends of the bridges at St. Joseph and Atchison. On 8 June Red cavalry and motorized infantry attempted crossings at both

---

\*To be issued with Special Map A at road bend 400 yards north-west of road junction 611-J.

cities. At St. Joseph the effort was defeated by Blue frontier guards who rendered the bridges impassable by demolitions. The Red detachment, after further damaging these bridges, withdrew and moved to the vicinity of Atchison.

At Atchison Red cavalry overran the Blue frontier force, seized the bridge, and advanced to the east.

*d. Situation at 7:00 AM, 9 June.*—(1) *Enemy.*—A Red force, estimated as a regiment of infantry, holds the high ground along the general line: Wallace—Simmons S.H., and is intrenching as shown on Special Map A. Cavalry covers its flanks. Light artillery is firing from the vicinity of road junction 540-H.

A column of foot troops, estimated as one battalion of infantry, marched east past Valley Chapel S.H., and, at 6:45 AM, its head was approaching road junction 532-H.

A column, estimated as two battalions of infantry, turned north at road junction 518-H at 6:30 AM, and, at the same time, a column of tractor-drawn artillery, approximately one and one-half miles in length, was moving east across the bridge at Atchison.

A force of all arms which marched northwest during the night from the direction of Topeka (General Map) went into bivouacs twenty miles west of Atchison at daylight today.

(2) *Own forces.*—(See Special Map A.)—The 1st Division is in march as shown. The 1st Brigade with the 1st Field Artillery, in two columns, is on the right; the 2d Brigade and 2d Field Artillery (less troops in Division Reconnaissance Detachment No. 2) are marching in two columns on the left; motorized and tractor-drawn elements are marching in the center column. At 7:00 AM heads of the advance guards are located as shown by arrows; leading elements have been in march two hours. Reconnaissance Detachment No. 1 is marching in the north column under brigade control.

Reconnaissance Detachment No. 2 holds the high ground near road junction 659-H with the 1st Squadron 1st Cavalry (less one platoon) on its flanks. These units are in contact with Red infantry and cavalry as shown. One platoon 1st Cavalry is attached to the 1st Brigade.

3. **FIRST REQUIREMENT.**—Orders issued, if any, by Major General A, commanding the 1st Division, to each infantry brigade at this time with brief reasons therefor.

## NOTES

1. Private property will not be entered.
2. Movement on reconnaissance northwest of the line held by Reconnaissance Detachment No. 2 and 1st Squadron 1st Cavalry is prohibited.
3. Sunrise, 4:55 AM; sunset, 7:40 PM.
4. Solutions will be turned in at crossroads 602-J by 3:00 PM, when Section II will be issued.

## SECTION II\*

### Special Situation (Blue), Continued, and Second Requirement

	Paragraph
Special situation (Blue), continued .....	4
Second requirement .....	5

4. **SPECIAL SITUATION (BLUE), CONTINUED.**—*a. Orders issued at 7:00 AM.*—At 7:00 AM, 9 June, Major General A issued orders extracts of which were as follows:

\* \* \* \* \*

The 2d Brigade, \* \* \*, employing initially not to exceed three battalions, will develop the hostile position at once on the front: Wallace—Dye (both inclusive), hold the enemy now on that front in position, and will be prepared to launch a strong attack with its left on division order.

One regiment (less one battalion) will march to covered position in the vicinity of road junction 407-J and await orders.

The 1st Brigade, \* \* \*, will seize the high ground east of Contrary Creek in the vicinity of Stony Point S.H. without delay and prepare to attack to the southwest to capture the high ground near DeKalb.

\* \* \* \* \*

For reasons see Section IV.

---

\*To be issued at crossroads 602-J at 3:00 PM.

*b. Situation at 11:00 AM, 9 June.*—(1) *Enemy.*—The enemy holds the line: road junction 332-H—road junction 448-H—crossroads 550-H—road junction 546-H—road junction 655-H—Simmons S.H.

Southwest of crossroads 550-H (inclusive) this line is intrenched and held by the force originally engaged; northwest of crossroads 550-H, it is held by covering detachments, apparently sent forward by columns, which, at 7:00 AM, were reported in march and which have entered the area: crossroads 444-H—Sampson S.H.—Lewis S.H.—Sleepy Valley S.H.

Cavalry extends this line to Kenmoor on the north flank and, along the high ground west of Bear Creek, to the vicinity of Platte Valley S.H., on the south.

155-mm. howitzers have fired from near road junction 532-H.

(2) *Own force.*—The 2d Brigade, with elements of three battalions in line, has driven in the hostile covering detachments and is in contact with the Red intrenched position on the front: crossroads 550-H—Simmons S.H. (both inclusive).

The 1st Brigade is completing assembly in the Stony Point S.H. area and has its advanced elements in contact with hostile covering detachments northwest of crossroads 550-H.

One platoon of the 1st Squadron 1st Cavalry is covering the right of the division near Bethel S. H.; the squadron (less one platoon) covers the left in contact with Red cavalry, along Bear Creek, south of Simmons S.H.

The 3d Infantry (less one battalion) is marching north with the leading elements approaching crossroads 408-J.

Other combat elements of the 1st Division are in positions or moving to positions as ordered at 7:00 AM.

*c. Decision of Major General A.*—At this time, 11:00 AM, Major General A has decided to attack without delay \* \* \*.

5. SECOND REQUIREMENT.—So much of the plan for the attack of the 1st Division as would be contained in paragraph 3 of a complete written field order to include instructions for the following only:

a. The holding attack.

b. The main attack.



- c. The division artillery (less antiaircraft artillery).
- d. The division reserve.

### NOTES

1. It will be assumed that Major General A, at 7:00 AM, issued the necessary instructions to all elements of his command to facilitate their employment in accordance with the plan now decided upon; that those instructions have been carried out so far as time and space factors permit; that the present locations of these elements are such as permit their use as desired by the solver.

2. Solutions will be turned in at road bend 400 yards northwest of road junction 611-J by 5:00 PM.

---

### SECTION III

#### A Solution of Second Requirement

A solution of second requirement ----- Paragraph 6

---

6. A SOLUTION OF SECOND REQUIREMENT.—At 11:00 AM, 9 June, Major General A has decided on a plan of attack, in part as follows:

a. To have the 2d Brigade (less 3d Infantry, less one battalion) with the following attached units:

- 2d Field Artillery
- One battalion 3d Field Artillery
- One platoon 1st Tank Company
- Company D 901st Chemical Regiment (smoke)
- One company Antitank Battalion,

continue to hold the enemy in position and, on division order, launch a strong attack with its left.

b. To have the 1st Brigade with the following attached units:

- Two platoons 1st Tank Company
- Company A 1st Engineers
- Company C 901st Chemical Regiment (smoke),

attack without delay in the general direction: Stony Point S.H.—DeKalb, and capture the high ground near DeKalb.

c. The 1st Field Artillery Brigade (less detachments) to support the attack as follows:

The 1st Field Artillery in direct support of the 1st Brigade.

The 3d Field Artillery (less one battalion) in general support from positions generally in rear of the enveloping force.

Artillery with the 2d Brigade to keep its fires south of the line: Taos—road junction 439-H, except on division order.

d. To have the 3d Infantry (less one battalion), 1st Tank Company (less three platoons), and the 1st Battalion 901st Chemical Regiment (less two companies) await orders in the area: Willow Brook—Faucett, in division reserve.

One battalion of the reserve to be prepared for movement by truck.

---

## SECTION IV

### Discussion

	Paragraph
Purpose -----	7
The decision -----	8
The plan -----	9

---

7. **PURPOSE.**—The purpose of this exercise is to illustrate the action of a division with an aggressive mission when an inferior enemy force is encountered hastily deploying for defense in such a position as to force an attack.

8. **THE DECISION.**—*a. Mission.*—The mission of the 1st Division, as modified by the events at St. Joseph, requires it to reach a location in which it can deny Red the use of the Atchison bridge. Since a Red force has interposed itself between the division and its objective, some form of offensive action is necessary; the defeat or driving away of this hostile force has become the immediate objective. This immediate objective is incidental to the accomplishment of the mission and although, for the time being, other con-

siderations must be subordinated, it must not divert the division from its *mission*.

*b. The tactical situation.*—(1) *Enemy.*—A part of the Red force has occupied and begun organizing a position. The remainder is in march. As a whole the enemy force is not definitely fixed. The dispositions of this force are such as to permit it to undertake any one of a number of courses of action. The strength of this force and its actions up to this time indicate that the following enemy capabilities should be considered:

(a) Passive defense in its present position extended to the north.

(b) Active defense with a maneuvering force on the north flank of the occupied position.

(c) Delay in a forward position, or positions, and defense on a rear position pending arrival of reinforcements.

Additional Red troops have been located within such distance that they are capable of reaching the area east of the Missouri River by daylight tomorrow by a forced march; some of these troops may arrive by truck much earlier.

(2) *Own force.*—The 1st Division, advancing on a broad front, has been in march two hours. Its dispositions are such as make it capable of enveloping either hostile flank without delay, but favor an envelopment from the north. No reinforcements are to be expected.

*c. Terrain.*—(1) *Possible hostile positions.*—The enemy occupies, with a part of his force, a position strong to the front with its south flank reasonably secure by reason of the restricted maneuver room and poor approaches available to Blue. If Red continues to hold this position, he must extend it to the north through Taos toward Sparta S.H., or through road junction 450-H toward Stony Point S.H. In neither case is there, within the limits capable of being strongly occupied by a force of Red's estimated strength, a terrain feature on which the north flank may be secured. The north flank would therefore be "in the air" and should Red undertake an actual defense (passive) on such a line, Blue will be able to envelop it readily and may cripple the Red force to an extent which will preclude further serious resistance farther to the west. Could he be assured that Red would adopt such a course Major General A might well halt and permit Red to occupy the position

unopposed. However, because of this obvious weakness it is unlikely Red will undertake defense of either line; it is entirely probable that he may, if allowed, occupy one of these lines to effect delay and withdraw before becoming seriously engaged.

The general line: road junction 332-H—Sampson S.H.—road junction 546-H—Simmons S.H., offers a position which Red may occupy in spite of Blue efforts to prevent it. Shorter than the other lines mentioned, it has the advantage of partially securing its north flank by refusing it and a Blue attempt at envelopment would find more restricted maneuver room. Occupation of this line would require most of the Red force available and leave inadequate reserves.

The line: road junction 421-H—Sugar Creek, offers a strong position with both flanks secured. Closer to the river than Red will desire and thereby restricting the maneuver of additional troops, it will, if held, prevent the accomplishment of the Blue mission.

From the viewpoint of terrain therefore it appears that Red may be expected to adopt delaying tactics initially in a position including some part, at least, of the position now being organized to be followed by a determined defense in a rear position, when forced back by Blue's superior strength.

(2) *Objective.*—From the above considerations the high ground in the vicinity of DeKalb is a suitable objective. If it is captured, or seriously threatened, Red will be forced to fall back, abandoning his organized position. The occupation of this area will permit Blue to seriously hamper Red's occupation of a new position.

(3) *Approaches.*—The valley of Contrary Creek and both the east and west slopes of the ridge: Bethel S.H.—DeKalb, afford direct approaches to the DeKalb area, while the stream lines west of that ridge will assist in extending the envelopment to the west.

d. *The will of the commander.*—The 1st Division began its advance with a definite mission of attacking any hostile force which might attempt to interfere provided only that the strength of such force did not preclude a reasonable expectation of success. This mission is unchanged. The tactical situation does not prevent aggressive action. The terrain must be used as a weapon against Red. It must be as-

sumed that the will of the commander is capable of meeting the situation.

*e. Conclusions.*—Since, for reasons stated, Red is unlikely to attempt an actual defense in any position which has its north flank east of Contrary Creek but may use such a position for delay, time will be saved if the 1st Division acts promptly to prevent his occupying such a position, to seize terrain which will favor its own future action, restrict Red's movements, and force him definitely on the defensive.

The hostile force is not fixed to the degree which permits Major General A to announce at this time a definite plan of attack. Nevertheless he has made his decision and has clearly in mind a general plan of attack. This plan of attack can be announced after the situation has cleared and details have been determined. In the meantime essential steps must be taken to insure the least possible delay in attacking when both the situation and plan have developed sufficiently. Instructions are therefore issued to fix the enemy and prepare for attack. These instructions do not commit the command irrevocably.

9. THE PLAN.—At 7:00 AM, Major General A had in mind a general plan of action looking toward the accomplishment of his mission. Because of the vague situation existing he was not justified in announcing that plan but he took the initiative and by aggressive action has forced Red, in a large degree, to conform to Blue movements. The situation therefore has developed about as anticipated and the commander's plan has been carried toward completion. As a result of the instructions issued at 7:00 AM Blue dispositions are such as to facilitate the execution of the plan.

*a. Holding attack.*—One of the first essentials is to fix, hold in place, the Red troops (including local reserves) now in the defensive position. It is also desired to attract other troops, general reserves. Since the attack is to be made in daylight, the advantage of darkness in accomplishing deceptions is denied the attacking force. This disadvantage must be offset, as far as possible, by rapidity and intensity of action by the use of natural cover and smoke.

About 6500 yards of hostile front are intrenched and easily defended. While three battalions have succeeded in driving in the Red covering detachments and may succeed in holding the hostile troops now occupying the position by

strong effort for a limited time, it is hardly to be expected that they can make the actual advance, or threat of advance, considered necessary to draw additional Red troops. Four battalions have been provided but the division commander has imposed a restriction which permits but three to be used in preliminary operations. He has thereby reduced his initial commitment, made available for the time being an additional reserve, and insured the availability of means to increase the power of the holding attack at the desired time.

To furnish adequate fire support one regiment of light artillery is employed and in addition one battalion of howitzers. The latter is thus readily available for counterbattery and to increase the fire in support of the principal effort; in addition, its presence with the holding attack is an aid in deception. The difficulty of centralized control because of the distance involved indicates attachment of this artillery to the holding attack force.

A liberal use of smoke will assist in providing cover and secrecy of movement. A platoon of tanks is considered essential to give added punch to the principal effort and will assist also in deceiving the enemy.

*b. Main attack.*—After providing the minimum force considered essential to the holding attack, all remaining combat means are concentrated on, or immediately available to, the main attack front. These means are organized into a main attack force and a general reserve.

One complete brigade of infantry is allotted to the main attack and other units are placed to assist its advance.

Smoke and tanks can be employed either initially or at later stages of the attack. Because the situation (from the viewpoint of this brigade commander) is indefinite and because in execution of the attack speed is essential, both chemical troops and tanks are provided and attached so that they may be readily available when needed.

A company of engineers is attached to assist in getting tanks forward rapidly and for such other use as the commander of the main attack force may desire.

*c. Division artillery.*—The 1st Field Artillery is placed in direct support of the 1st Brigade and the 3d Field Artillery (less one battalion) is in general support and so located as to permit massing its fire on the front of the main attack. These units are retained under division control

and provide the commander with powerful means of influencing the action.

As stated in subparagraph *a* the artillery with the holding attack force is attached thereto.

*d. Reserve.*—One regiment (less one battalion) of the 2d Brigade is designated as the division reserve. The restricted maneuver room on the outer flank of the envelopment lessens the probability that this unit can be used effectively to widen the envelopment or that it will be required to oppose a Red counter envelopment. It is possible that Red, in attempting to prevent envelopment, may so weaken his center as to permit a drive through between the main and holding attacks or that it may be advisable to use the reserve on the front of the holding attack. This reserve is placed to favor its use on the main attack front because it is there that the decision is sought and expected, but it is not considered necessary to place it behind the outer flank.

One battalion is prepared for truck movement and it is believed this battalion (less elements for which trucks are not provided) might well remain in the vicinity of New Market where, if located by Red, it will become an added factor in deception since the additional distance to the north flank is immaterial in a truck movement.

The 1st Tank Company (less three platoons) is held in reserve and located to favor service and assistance to its platoons with the main attack.

In this situation, because of the limited maneuver space in the angle of the Missouri River, it is not considered desirable to use gas. The chemical battalion (less two companies) is therefore held in reserve, available for use in emergency.

For convenience in supply and control all of these units are located in one general area beyond maximum range of hostile artillery. They may, if desired, be moved nearer the enemy's position after the attack is launched and the hostile artillery is fully engaged in an effort to stop the attack.

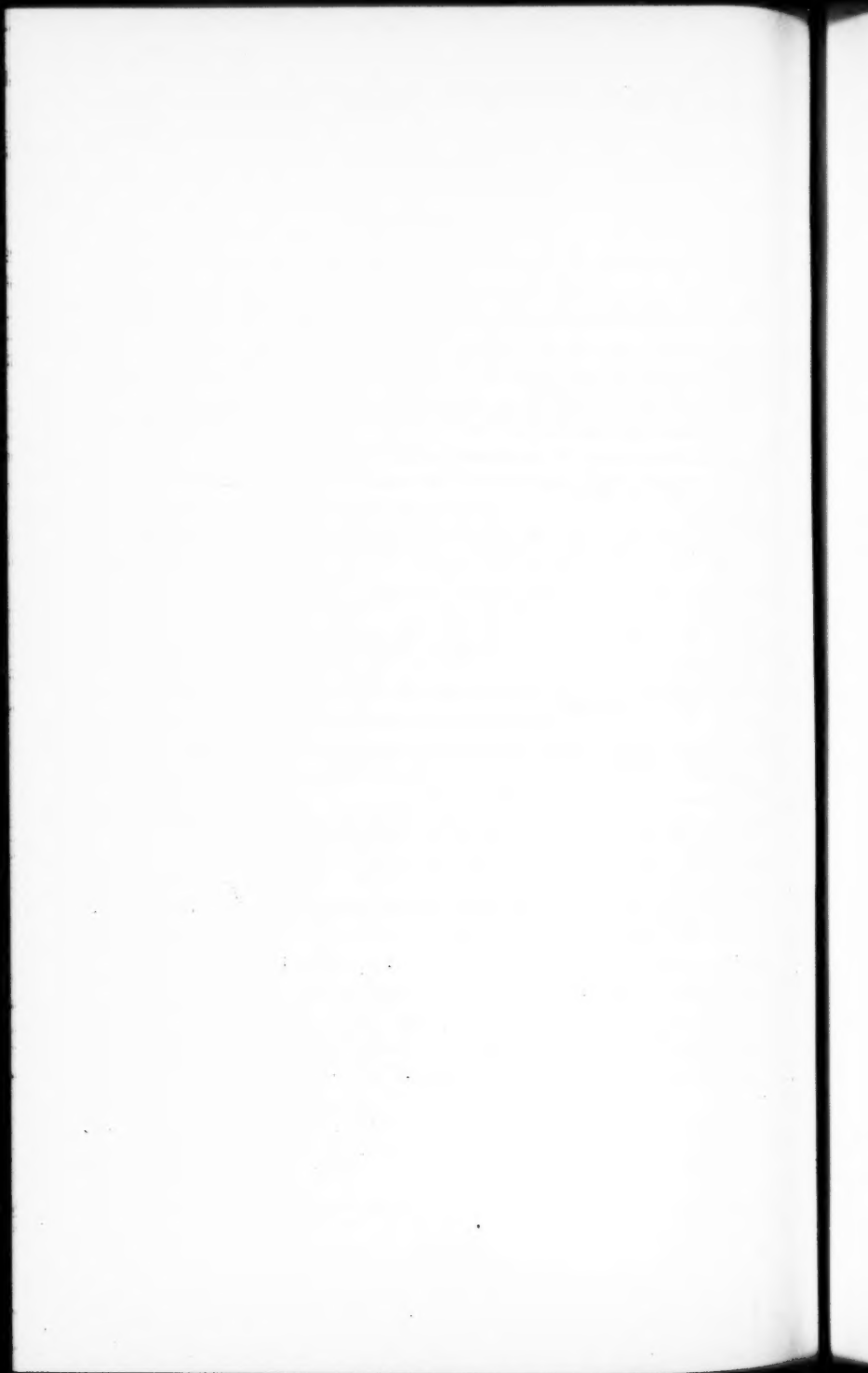


## Section 6

### LIBRARY BULLETIN

BOOKS ADDED TO THE LIBRARY SINCE JUNE 1936

- Belgium. Ministry of National Defense.—**Combat de Haelen 12 aout, 1914.** [The combat at Haelen, 12 August 1914.] 1934 [M 9403-J.44:4-D]
- Bishop, Major General H.G.: **Field Artillery. The King of Battles.** 1935 [M 407-J1.73]
- Cambridge medieval history.** Vol. VIII: The close of the middle ages. 1936 [94-A]
- Command and General Staff School:  
**The decisions and indiscretions of General A.** 1935 [M 209-C.73-D4E-2D]  
**Year Book of the 13th Special Class, 1936, C. & G.S.S., Fort Leavenworth, Kansas.** 1936 [M 209-C.73-D4E-2D]
- Encyclopedia of Canada.** Vol. III: Gabarus—Laurierville. 1936 [971]
- Federal Reporter, second series.** Vol. 80 (2d), January-March 1936; Vol. 81 (2d), March-April 1936. 1936 [345.41]
- Federal Supplement.** Vol. 13: February-May 1936. 1936 [345.41]
- France. Ministère de la Guerre.—**The French Armies in the Great War.** The development and adoption of Plan XVII. (Translation from the French.—Pages 1-40, incl., of Book 1, 1st Volume Annexes.) 1922 [M 9403-E4-D.44-C]
- Garber, Colonel Max B.—**A modern military dictionary.** 1936 [M 202-R.73]
- Gorin, Lewis J., Jr.—**Patriotism prepaid.** 1936 [M 104-C.73-A3-C]
- Infantry School.—**Mailing List.** Vol. XII, July 1936. 1936 [M 404-C.73-E3-B4]
- Kuhl, General H. von.—**The Marne Campaign.** (Translation from the German) 1936 [M 9403-J.44-4N5.43]
- Library of Congress.—**Journals of the Continental Congress 1774-1789.** Vols. XXXII and XXXIII. 1936 [328.731]
- Malcolm, George A.—**The Commonwealth of the Philippines.** 1936 [991.4]
- Nebraska State Historical Society.—**Land systems and land policies in Nebraska. A history of Nebraska land.** (Vol. XXII, State Historical Society Publications.) 1936 [978.2]
- New International Year Book, 1935.** 1936 [031]
- Rosenberg-Lipinsky, Captain Sans-Oskar.—**Das Königin Elisabeth Garde-Grenadier-Regiment Nr. 3 im Weltkrieg 1914-1918.** [The Queen Elizabeth Garde-Grenadier Regiment No. 3, in the World War, 1914-1918.] 1935 [M 9403-G4-C.43]
- United States Polo Association Year Book, 1936.** 1936 [M 403-G7.73]
- War Department:  
**Basic Field Manual.** Vol. I: Field Service pocketbook. Chapter 4: Physical training. 1936 [M 506-A4.73]  
**Opinions, J.A.G., 1931, 1932, 1933, 1934.** [M 207-C.73-D]



## Section 7

### READERS' GUIDE AND SUBJECT INDEX

- A**
- Aerial Warfare
  - Air Arm
  - Ammunition
  - Animals
  - Antiaircraft Artillery
  - Antiaircraft Defense
  - Antigas
  - Antitank
  - Applicatory Exercises
  - Armaments
  - Armies (See country)
    - Command & Staff
    - Mobilization
    - Organization & Equipment
    - Training
  - Armored Cars
  - Art of War Strategy
  - Artillery (Other Arms, similarly)
    - Command & Staff
    - Organization & Equipment
    - Training Tactics
  - Attack
- B**
- Breakthrough Operations
- C**
- Camouflage
  - Cavalry
  - Chemical Warfare Service
  - Civilian Conservation Corps
  - Coast Artillery
  - Command, Staff & Logistics
  - Counterattack
- D**
- Defiles
  - Delaying Action
  - Disarmament
- E**
- Engineers
  - Envelopment
  - Equitation
- F**
- Fire Superiority
  - Flank Operations
  - Formations, Battle
  - Fortifications
  - France (Army of)
  - Future Warfare
- G**
- Gas & Smoke (Use of)
  - Geography (Military)
  - Germany (Army of)
  - Great Britain (Army of)
- H**
- History (General)
- I**
- Infantry
  - Intelligence (Military)
  - International Relations
  - Italy (Army of)
- J**
- Japan (Army of)
  - Joint Operations
- K**
- L**
- Large Units, Organization & Tactical Functions (Army, Corps & Division)
  - Law, Military & International
  - Leadership
  - Liaison
- M**
- Machine Guns
  - Maneuvers
  - Map Problems
- Marches**
- Marine Corps
  - Mechanization
  - Medical Service
  - Meeting Engagement
  - Mining
  - Mobile Warfare
  - Mobility
  - Mobilization
  - Motorization
- N**
- National Defense
  - Naval Warfare
  - Navies (See country)
  - Night Operations
- O**
- Obstacles
  - Ordnance Service
  - Organization
  - Overseas Expeditions
- P**
- Penetration
  - Position Warfare
  - Principles of War
  - Pursuit
- Quartermaster Service**
- R**
- Raids
  - Reconnaissance
  - Riots
  - River Crossings
  - Routes Communications
- S**
- Security
  - Signal Service
  - Supply
- T**
- Tactics Operations
    - Evolution of Tactics
    - General topics
    - Defensive combat
    - Offensive combat
    - Special warfare
    - Troop movements
  - Tanks
  - Technology
  - Terrain
  - Topography Surveying
  - Transportation
  - Turning Movements
- U**
- United States (Army of)
- V**
- Veterinary Service
- W**
- War Peace
  - Wars (Ancient, Medieval, Modern)
    - World War
      - C—Socio-Economic History
      - E—General Military History
      - F—Zone of Interior
      - G—Arms & Services
      - H—Military Conduct of the War in the Field
      - J—Campaigns & Battles
      - L—Naval History
- Weapons**
- Withdrawal**
- X**
- Y**
- Z**

**List of Periodicals Indexed  
and  
Key to Abbreviations**

<b>A Med Bul</b> —Army Medical Bulletin	<b>Mil-Woeh</b> —Militär-Wochenblatt (Germany)
<b>AN&amp;AF Gaz</b> —Army, Navy & Air Force Gazette (Great Britain)	<b>Mil Eng</b> —Military Engineer
<b>A Quar</b> —Army Quarterly (Great Britain)	<b>Mil Surg</b> —Military Surgeon
<b>Bul Belge Mil</b> —Bulletin Belge des Sciences Militaires (Belgium)	<b>Nav Inst Proc</b> —Naval Institute Proceedings
<b>Can Def Quar</b> —Canadian Defence Quarterly (Canada)	<b>Pion</b> —Pioniere (Germany)
<b>Cav Jour</b> —Cavalry Journal	<b>QM Rev</b> —Quartermaster Review
<b>Cav Jour [GB]</b> —Cavalry Journal (Great Britain)	<b>Rv l'Air</b> —Revue de l'Armée de l'Air (France)
<b>Chem War</b> —Chemical Warfare Bulletin	<b>Rv d'Art</b> —Revue d'Artillerie (France)
<b>CA Jour</b> —Coast Artillery Journal	<b>Rv de Cav</b> —Revue de Cavalerie (France)
<b>FA Jour</b> —Field Artillery Journal	<b>Rv d'Inf</b> —Revue d'Infanterie (France)
<b>Ftg Forc</b> —Fighting Forces (Great Britain)	<b>Rv Mil Fran</b> —Revue Militaire Française (France)
<b>Inf Jour</b> —Infantry Journal	<b>Rv Mil Suisse</b> —Revue Militaire Suisse (Switzerland)
<b>Jour RAMC</b> —Journal of the Royal Army Medical Corps (Great Britain)	<b>Riv Art e Gen</b> —Rivista di Artiglieria e Genio (Italy)
<b>Jour R Art</b> —Journal Royal Artillery (Great Britain)	<b>RAF Quar</b> —Royal Air Force Quarterly (Great Britain)
<b>Jour RUSI</b> —Journal of the Royal United Service Institution (Great Britain)	<b>RASC Quar</b> —Royal Army Service Corps Quarterly (Great Britain)
<b>Jour USII</b> —Journal of the United Service Institution of India (Great Britain—India)	<b>Roy Eng Jour</b> —Royal Engineers Journal (Great Britain)
<b>MC Gaz</b> —Marine Corps Gazette	<b>Sanct Chris</b> —Sanct Christophorus (Germany)
<b>Mil Mitt</b> —Militärwissenschaftliche Mitteilungen (Austria)	<b>SC Bul</b> —Signal Corps Bulletin
	<b>Vet Bul</b> —Veterinary Bulletin
	<b>Ws &amp; Wr</b> —Wissen und Wehr (Germany)

Jan—January  
Feb—February  
Mar—March  
Apr—April  
May—May  
Jun—June

Jul—July  
Aug—August  
Sep—September  
Oct—October  
Nov—November  
Dec—December

## A

## ACCOMPANYING ARTILLERY

- Italy: Accompanying artillery. (Rv d'Inf—Feb 1936)  
 Accompanying artillery. (Rv Mil Suisse—Feb 1936)  
 Accompanying battery with an infantry regiment. (Riv Art e Gen—Jan 1936)

## ADDRESSES

- Addresses at the reopening of the German War College. (Rv Mil Fran—Feb 1936)

## AERIAL WARFARE

- The air war. (AN&AF Gaz—25 Jun 1936)  
 The air doctrine of central shock and its effect upon supply. (A Quar—Jul 1936)  
 General Douhet's doctrine of war. (CA Jour—Jul-Aug 1936)  
 Aircraft attacks or gunfire against warships. (Jour RUSI—May 1936)  
 Air strategy. (RAF Quar—Jul 1936)  
 The principles of war and the R.A.F.—Security. (RAF Quar—Jul 1936)  
 Soviet ideas of modern air combat. (Mil-Woch—4 May 1936)  
 The machine to end war. (Rv l'Air—Jan 1936)  
 Bombardment of ships of war. (Rv l'Air—Feb 1936)

## AIR ARM

## Organization and Equipment

- Medical field equipment for the Air Corps. (A Med Bul—Apr 1936)  
 The Royal Air Force display. (AN&AF Gaz—25 Jun 1936)  
 Royal Air Force expansion. (AN&AF Gaz—25 Jun 1936)  
 Lighter than air in 1936. (AN&AF Gaz—25 Jun 1936)  
 Display of British aircraft. (AN&AF Gaz—2 Jul 1936)  
 "The effect of the development of air power on British interests in the Mediterranean." (Jour RUSI—May 1936)  
 Air strategy. (RAF Quar—Jul 1936)  
 Bomber aircraft—A reply. (RAF Quar—Jul 1936)  
 Air digest. Belgium: The "Faurey Kangaroo." (Bul Belge Mil—Mar 1936)  
 Motorized captive balloons. (Mil-Woch—11 Mar 1936)  
 The French air division of 1918. (Mil-Woch—25 Mar 1936)  
 Soviet ideas of modern air combat. (Mil-Woch—4 May 1936)  
 Aircraft armament. (Mil-Woch—18 May 1936)  
 Determination of the position of an airplane in space at a given moment.—Measurement of speeds. (Rv l'Air—Feb 1936)  
 Memories of the early days of French military aviation. (Rv l'Air—Feb 1936)  
 Creation of parachute companies. (Rv d'Inf—Feb 1936)

## Training Tactics

- The medical contribution to the development of blind flying. (A Med Bul—Jul 1936)  
 The air war. (AN&AF Gaz—25 Jun 1936)  
 Gliding. (AN&AF Gaz—25 Jun 1936)  
 The air doctrine of central shock and its effect upon supply. (A Quar—Jul 1936)  
 General Douhet's doctrine of war. (CA Jour—Jul-Aug 1936)  
 Fighting for observation. (Inf Jour—May-Jun 1936)  
 "Give us our own eyes," or "You have the best stalls—we want them." (Jour R Art—Jul 1936)  
 Aircraft attacks or gunfire against warships. (Jour RUSI—May 1936)  
 Air strategy. (RAF Quar—Jul 1936)  
 The principles of war and the R.A.F.—Security. (RAF Quar—Jul 1936)

The navigation problems of an air striking force. (RAF Quar—Jul 1936)  
 Air intelligence—The army's safeguard. (RAF Quar—Jul 1936)

- A progressive engineer branch for the R.A.F. A reply. (RAF Quar—Jul 1936)  
 The army air alert net. (SC Bul—Jul-Aug 1936)  
 Meteorological service for the 1936 G.H.Q. Air Force Winter Maneuver in New England. (SC Bul—Jul-Aug 1936)  
 Medical aviation in North Africa and in French mandate territories of the Near East in 1934. (Bul Belge Mil—Feb 1936)  
 Motorized captive balloons. (Mil-Woch—11 Mar 1936)  
 Guiding aircraft by means of radio telephone. (Mil-Woch—25 Mar 1936)  
 The French air division of 1918. (Mil-Woch—25 Mar 1936)  
 Italian air force in the Abyssinian War. (Mil-Woch—11 Apr 1936)  
 The air arm and naval forces. (Mil-Woch—18 Apr 1936)  
 Soviet ideas of modern air combat. (Mil-Woch—4 May 1936)  
 The machine to end war. (Rv l'Air—Jan 1936)  
 Interpretation of terrain by aerial observation. (Rv l'Air—Jan 1936)  
 Physiology and the practice of parachute jumping. (Rv l'Air—Jan 1936)  
 The official doctrine of French military aviation. (Rv l'Air—Feb 1936)  
 Bombardment of ships of war. (Rv l'Air—Feb 1936)

Determination of the position of an airplane in space at a given moment.—Measurement of speeds. (Rv l'Air—Feb 1936)  
 Rumania: Action of aviation cooperating with infantry. (Rv d'Inf—Jan 1936)  
 Great Britain: Protection of columns against aviation at night. (Rv d'Inf—Jan 1936)  
 Creation of parachute companies. (Rv d'Inf—Feb 1936)  
 The characteristics of the air targets and the anti-aircraft weapons. (Ws & W—Feb 1936)

## ALBERT I, King of the Belgians (1875-1934)

Speech by M.A. Devezze, Minister of National Defense, at the inauguration of the memorial to King Albert. (Bul Belge Mil—Jan 1936)

## ALLENBY, General Edmund (Henry Hynman)

Lord Allenby of Megiddo (1861-1936)

Allenby: An appreciation. (A Quar—Jul 1936)

## AMMUNITION

- "Time shrapnel in a nutshell." (Jour R Art—Jul 1936)  
 Production of arms and munitions in Austria-Hungary in 1916. (Riv Art e Gen—Nov-Dec 1935)

## ANIMALS

- Diseases and injuries of animals of the 7th Cavalry on the marches and during the 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
 Use of compressed hay cube component of the forage ration. (Cav Jour—May-Jun 1936)  
 Veterinary statistics of the German Army for 1932. (Bul Belge Mil—Mar 1936)  
 Breeding of horses in Holland. (Rv de Cav—Jan-Feb 1936)

## ANTI-AIRCRAFT ARTILLERY

- Training of the AA Searchlight Battery. (CA Jour—May-Jun 1936)  
 Organization of AA. machine guns. (CA Jour—May-Jun 1936)  
 Preparation of anti-aircraft artillery fire. (CA Jour—Jul-Aug 1936)  
 Organization of AA regiment. (CA Jour—Jul-Aug 1936)

## ANTI-ART

- Bombardment of ships of war. (Rv l'Air—Feb 1936)  
Ranging of antiaircraft barrage. (Riv Art e Gen—Nov-Dec 1935)  
The characteristics of the air targets and the antiaircraft weapons. (Ws & Wr—Feb 1936)

### ANTIAIRCRAFT DEFENSE

- Protection of marching columns. (CA Jour—May-Jun 1936)  
Antiaircraft defense in France. (CA Jour—Jul-Aug 1936)  
The collective training of mobile A.A. searchlight units. (Roy Eng Jour—Jun 1936)  
With reference to passive defense (against aircraft). (Bul Belge Mil—Jan 1936)

### ANTITANK

- Antitank defense. (Inf Jour—Jul-Aug 1936)  
Horse or motor power? Ideas on the organization and use of the antitank company of the infantry regiment. (Bul Belge Mil—Mar 1936)  
Engineers and infantry. (Bul Belge Mil—Mar 1936)  
The employment of the antitank company for march security. (Mil-Woch—11 Mar 1936)  
Tank warfare. (Mil-Woch—18 Mar 1936)  
The tank attack at Cambrai. (Mil-Woch—4 Apr 1936)  
Antitank defense. (Mil-Woch—18 Apr 1936)  
Super tanks and defense against them. (Mil-Woch—25 Apr 1936)  
Antitank defense in defense and delaying action. (Mil-Woch—11 May 1936)  
Correct or incorrect methods of antitank defense. (Mil-Woch—18 May 1936)  
Modern trends in foreign infantry. (Rv d'Inf—Feb 1936)  
The use of artillery against mechanized vehicles. (Rv Mil Fran—Mar 1936)  
Critical observations on antitank defense. (Sanct Chris—Jan 1936)  
The employment of antitank weapons. (Sanct Chris—Feb 1936)  
New armored vehicles and anti-armor defensive weapons throughout the world. (Sanct Chris—Feb 1936)  
Conduct of tanks when confronted with antitank mines. (Sanct Chris—Mar 1936)  
Defense against armored vehicles. (Sanct Chris—Mar 1936)

### APPROACH MARCH

- Tactical formations for the cavalry regiment. (Cav Jour—May-Jun 1936)  
Divergent principles for meeting engagements based on German and French regulations. [See Section 2]  
Maneuver and fire direction of the 75-mm. battalion of division artillery. [See Section 2]  
Guatemala: The approach march. (Rv d'Inf—Mar 1936)

### ARMAMENT

- Aircraft armament. (Mil-Woch—18 May 1936)  
The armament of the Italian infantry. (Riv Art e Gen—Feb 1936)  
Influence of infantry armament on division artillery. (Riv Art e Gen—Feb 1936)

### ARMORED CARS

- A night with armored cars. (RAF Quar—Jul 1936)  
Motorization in different armies. (Bul Belge Mil—Jan 1936)  
Reconnaissance with armored scout cars. (Mil-Woch—4 May 1936)  
Armored and motorized units in the maneuvers of foreign armies. (Sanct Chris—Jan 1936)  
New armored vehicles and anti-armor defensive weapons throughout the world. (Sanct Chris—Feb 1936)  
Defense against armored vehicles. (Sanct Chris—Mar 1936)

## ART OF WAR STRATEGY

- The future of artillery—A speculation. (AN&AF Gaz—16 Apr 1936)  
The vicissitudes of a strategic manoeuvre. (AN&AF Gaz—23 Apr 1936)  
Military prize essay, 1936. (A Quar—Jul 1936)  
Tactical doctrine up-to-date: Field Service Regulations, Part II, 1935. (A Quar—Jul 1936)  
The air doctrine of central shock and its effect upon supply. (A Quar—Jul 1936)  
An analysis of tactical surprise. (A Quar—Jul 1936)  
Field Service Regulations, Vols. II and III, 1935. (Can Def Quar—Jul 1936)  
Smoke in the World War. (Chem War—Jul 1936)  
Protection of food and forage. (Chem War—Jul 1936)  
General Douhet's doctrine of war. (CA Jour—Jul-Aug 1936)  
Burlap and fish net. (FA Jour—Jul-Aug 1936)  
The new F.S.R. (Ftg Force—Jun 1936)  
The apprentice strategist. (Inf Jour—Jul-Aug 1936)  
Can methods of warfare be restricted. (Jour RUSI—May 1936)  
Minor tactics training. (Jour USII—Apr 1936)  
The principles of war and the R.A.F.—Security. (RAF Quar—Jul 1936)  
Essentials of leadership. [See Section 1]  
Field Service Regulations of the future. [See Section 1]  
Tank doctrine. (Bul Belge Mil—Jan 1936)  
Future protection of headquarters and command posts. (Bul Belge Mil—Feb 1936)  
The German plan for the attack of Liege in 1914. (Bul Belge Mil—Mar 1936)  
The problem of speed in modern tactics. (Mil-Woch—4 Apr 1936)  
Field Marshal Count von der Goltz. (Mil-Woch—11 Apr 1936)  
Surprise. (Mil-Woch—18 Apr 1936)  
The air arm and naval forces. (Mil-Woch—18 Apr 1936)  
Mobile forces in unoccupied areas. (Mil-Woch—25 Apr 1936)  
Military propaganda in the Army. (Mil-Woch—11 May 1936)  
The machine to end war. (Rv l'Air—Jan 1936)  
Re-reading military thinking: Abstract definition of tactics. (Rv d'Inf—Jan 1936)  
Proverbs. (Rv d'Inf—Feb 1936)  
Warfare of the past and future. Motorized units in the offensive. (Rv Mil Fran—Jan 1936)  
Field Marshal Count von Haeseler, 19 January 1836-26 October 1919. (Ws & Wr—Jan 1936)

### ARTILLERY

#### Organization and Equipment

- The future of artillery—A speculation. (AN&AF Gaz—16 Apr 1936)  
New standard 75-mm. artillery weapon. (A Ord—Mar-Apr 1936)  
The maintenance of field artillery motorized units and the control of its supply trains. (FA Jour—May-Jun 1936)  
Diesel motors as power plants in army vehicles. (FA Jour—Jul-Aug 1936)  
Treatise on the 6-in. gun. (Jour R Art—Jul 1936)  
"Time shrapnel in a nutshell." (Jour R Art—Jul 1936)  
Artillery matériel and heavy machine guns descended from the War.—III: Improvements in artillery matériel since 1914-18. (Bul Belge Mil—Jan, Feb 1936)  
Artillery organization. (Mil-Woch—18 Apr 1936)  
Production of arms and munitions in Austria-Hungary in 1916. (Riv Art e Gen—Nov-Dec 1935)  
Pack artillery. (Riv Art e Gen—Nov-Dec 1935)  
Influence of infantry armament on division artillery. (Riv Art e Gen—Feb 1936)

**Training Tactics**

- The future of artillery—A speculation. (AN&AF Gaz—16 Apr 1936)
- A method of conducting the march of a battalion of light artillery as part of an advance guard when conduct is imminent. (FA Jour—May-Jun 1936)
- An experiment in specialization. (FA Jour—May-Jun 1936)
- The maintenance of field artillery motorized units and the control of its supply trains. (FA Jour—May-Jun 1936)
- Teaching conduct of fire, lateral. (FA Jour—May-Jun 1936)
- The last chance—Second campaign of the Marne. (FA Jour—May-Jun 1936)
- Burlap and fish net. (FA Jour—Jul-Aug 1936)
- Artillery notes on the Marfa maneuvers. (FA Jour—Jul-Aug 1936)
- The organization of counter-battery work in mobile warfare by a medium brigade allotted to a division. (Jour R Art—Jul 1936)
- Echoes of the past. A surgeon of the Royal Artillery. (Jour R Art—Jul 1936)
- "Give us our own eyes," or "You have the best stalls—we want them." (Jour R Art—Jul 1936)
- Maneuver and fire direction of the 75-mm. battalion of division artillery. [See Section 2]
- Artillery protection of outguards. (Bul Belge Mil—Mar 1936)
- Artillery in colonial campaigns. (Bul Belge Mil—Mar 1936)
- The allotments of artillery in offensive actions from 1914 to 1918. (Bul Belge Mil—Mar 1936)
- Shall there be artillery in the advance guard? (Mil-Woch—11 Apr 1936)
- Artillery organization. (Mil-Woch—18 Apr 1936)
- Combating artillery during the attack. (Mil-Woch—4 May 1936)
- Angular speeds of aerial targets. (Rv d'Art—Jan 1936)
- The operation of a miniature firing terrain, the Rémy system. (Rv d'Art—Jan 1936)
- Views of a battalion commander on infantry-artillery liaison. (Rv d'Art—Feb 1936)
- Battalion fires or battery fires? (Rv d'Art—Feb 1936)
- Angular speed of the future point of aerial targets. Zones of action. (Rv d'Art—Feb 1936)
- Orientation of three known points when only two of the points are visible from each of two observation posts. (Rv d'Art—Feb 1936)
- Apropos of the problem of high bursts. (Rv d'Art—Mar 1936)
- The high burst adjustment section, 1924 method. Methods of topographical installations. (Rv d'Art—Mar 1936)
- Errors in the topographical installation of a high burst adjustment section, 1924 method. (Rv d'Art—Mar 1936)
- Direct telephonic communications by mixed circuits (radio and telephone). (Rv d'Art—Mar 1936)
- The use of artillery against mechanized vehicles. (Rv Mil Fran—Mar 1936)
- Accompanying artillery. (Rv Mil Suisse—Feb 1936)

**ATTACK**

- An analysis of tactical surprise. (A Quar—Jul 1936)
- Forms of attack against harbor defenses. (CA Jour—May-Jun 1936)
- The scorpion attack. (Inf Jour—May-Jun 1936)
- Aircraft attacks or gunfire against warships. (Jour RUSI—May 1936)
- Pack howitzer battery in landing attack. (MC Gaz—May 1936)
- The principles of war and the R.A.F.—Security. (RAF Quar—Jul 1936)
- Employment of motorized machine gun battalions. [See Section 2]

- Views on the surprise attack on Liege. (Mil-Woch—11 Mar 1936)
- Does the combat team still exist when the attack begins? (Mil-Woch—4 Apr 1936)
- The tank attack at Cambrai. (Mil-Woch—4 Apr 1936)
- Shall there be artillery in the advance guard? (Mil-Woch—11 Apr 1936)
- Combating artillery during the attack. (Mil-Woch—4 May 1936)
- The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)
- Critical observations on antitank defense. (Sanct Chris—Jan 1936)

**AUSTRIA (ARMY OF)**

- The sand table. (Mil Mitt—Feb 1936)
- Armored and motorized units in the maneuvers of foreign armies. (Sanct Chris—Jan 1936)

**AUSTRIA-HUNGARY (ARMY OF)**

- Production of arms and munitions in Austria-Hungary in 1916. (Riv Art e Gen—Nov-Dec 1935)

**B****BELGIUM (ARMY OF)**

- Speech by M. A. Devezze, Minister of National Defense, at the inauguration of the memorial to King Albert. (Bul Belge Mil—Jan 1936)
- The Belgian national defense since 1830. (Bul Belge Mil—Jan, Feb, Mar 1936)
- Artillery matériel and heavy machine guns descended from the War.—III: Improvements in artillery matériel since 1914-18. (Bul Belge Mil—Jan, Feb 1936)
- Principal characteristics of colonial campaigns. (Bul Belge Mil—Feb 1936)
- Artillery protection of outguards. (Bul Belge Mil—Mar 1936)
- Artillery in colonial campaigns. (Bul Belge Mil—Mar 1936)
- Air digest. Belgium: The "Fairey Kangaroo." (Bul Belge Mil—Mar 1936)

**BREAKTHROUGH OPERATIONS**

- The breakthrough offensive at Neuve Chapelle, 1915. (Mil-Woch—18 May 1936)

**C****CAMOUFLAGE**

- Burlap and fish net. (FA Jour—Jul-Aug 1936)

**CANADA (ARMY OF)**

- Reorganisation of the Canadian Militia. (AN&AF Gaz—9 Jul 1936)
- The defence of Canada. (Can Def Quar—Jul 1936)
- Field Service Regulations, Vols. II and III, 1935. (Can Def Quar—Jul 1936)
- The "Minute Men" of Canada. (MC Gaz—May 1936)
- National defense in Canada. (Mil Eng—Jul-Aug 1936)

**CAUSES OF WAR**

- The origin and causes of war. (Can Def Quar—Jul 1936)

**CAVALRY****History**

- Army wife. (Inf Jour—Jul-Aug 1936)

**Organization and Equipment**

- First Cavalry (Mechanized). (A Ord—Mar-Apr 1936)
- The 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)
- Use of compressed hay cube component of the forage ration. (Cav Jour—May-Jun 1936)



Tactical formations for the cavalry regiment. (Cav Jour—May-Jun 1936)  
Proposed two-wheeled ambulance trailer for veterinary cases. (Cav Jour—May-Jun 1936)  
Cavalry conversions old and new. (Cav Jour [GB]—Jul 1936)

#### Training Tactics

The 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
1st Cavalry Division railroad at Marfa, Texas, April-May 1936. (Cav Jour—May-Jun 1936)  
Ordnance field service operations during the 1st Cavalry Division Maneuvers. (Cav Jour—May-Jun 1936)  
March of 1st Cavalry Brigade to and from the 1936 division maneuvers. (Cav Jour—May-Jun 1936)  
March of 2d Cavalry Brigade to and from the 1936 division maneuvers. (Cav Jour—May-Jun 1936)  
Diseases and injuries of animals of the 7th Cavalry on the marches and during the 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
Use of compressed hay cube component of the forage ration. (Cav Jour—May-Jun 1936)  
Tactical formations for the cavalry regiment. (Cav Jour—May-Jun 1936)  
The Yeomanry at Gaza. Part III (October 27th—November 6th, 1917). (Cav Jour [GB]—Jul 1936)  
Napoleon's employment of cavalry under the Consulate and Empire. (Cav Jour [GB]—Jul 1936)  
Artillery notes on the Marfa maneuvers. (FA Jour—Jul-Aug 1936)  
The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)

#### CHEMICAL WARFARE SERVICE

Our gas defence crisis. (AN&AF Gaz—11 Jun 1936)  
The gas attack at Ypres. (Chem War—Apr, Jul 1936)  
301st Regimental training, 1935. (Chem War—Apr 1936)  
A chemical warfare library. (Chem War—Apr 1936)  
Smoke in the World War. (Chem War—Jul 1936)  
Meteorology in the next war. (Chem War—Jul 1936)  
Protection of food and forage. (Chem War—Jul 1936)

#### CHILE (ARMY OF)

Chile: The use of ground and the appreciation of distances. (Rv d'Inf—Mar 1936)  
Chile: Observation in small units (a battalion observation post). (Rv d'Inf—Mar 1936)

#### CHINA (ARMY OF)

Railroad construction race between Soviet Russia and Japan. (Mil-Woch—25 Apr 1936)

#### CIVILIAN CONSERVATION CORPS

Typhoid in the C.C.C. (Mil Surg—Jul 1936)  
Impressions of duty with the CCC. (Nav Inst Proc—May 1936)  
Signal communication for the Civilian Conservation Corps. (SC Bul—Jul-Aug 1936)

#### COAST ARTILLERY

Bombardment of the Hartlepoons. (CA Jour—May-Jun 1936)  
Training of the AA Searchlight Battery. (CA Jour—May-Jun 1936)  
A practical improvised radio truck. (CA Jour—May-Jun 1936)  
Emergency methods of fire control. (CA Jour—May-Jun 1936)  
Forms of attack against harbor defenses. (CA Jour—May-Jun 1936)

Harbor defense. (CA Jour—Jul-Aug 1936)  
The Coast Artillery School. (Mil Eng—Jul-Aug 1936)

#### COAST DEFENSE

The defence of Canada. (Can Def Quar—Jul 1936)  
Forms of attack against harbor defenses. (CA Jour—May-Jun 1936)  
Harbor defense. (CA Jour—Jul-Aug 1936)

#### COMMAND, STAFF, AND LOGISTICS

Food supply the first line of defence. (AN&AF Gaz—21 May 1936)  
War reserve granaries. (AN&AF Gaz—4 Jun 1936)  
Food supply in war time. (AN&AF Gaz—16 Jul 1936)  
Military supply. Industry should be prepared for its war mission. (A Ord—Mar-Apr 1936)  
The Infantry Division Ordnance Maintenance Company. (A Ord—Mar-Apr 1936)  
Allenby: An appreciation. (A Quar—Jul 1936)  
Field Service Regulations, Vols. II and III, 1935. (Can Def Quar—Jul 1936)  
The new F.S.R. (Fig Forc—Jun 1936)  
The apprentice strategist. (Inf Jour—Jul-Aug 1936)  
Souvenirs sur Foch. (Jour R Art—Jul 1936)  
Essentials of leadership. [See Section 1]  
Field Service Regulations of the future. [See Section 1]  
Medical aviation in North Africa and in French mandate territories of the Near East in 1934. (Bul Belge Mil—Feb 1936)  
The evacuation of the Baltic states by the Germans. (Bul Belge Mil—Mar 1936)  
The dangerous experiment. (Mil-Woch—11 Apr 1936)  
The exercise of command. (Rv l'Air—Feb 1936)  
Field Marshal Count von Haeseler, 19 January 1836-26 October 1919. (Ws & Wr—Jan 1936)  
War demands and their supply as a problem to military leaders. (Ws & Wr—Feb 1936)  
The problem of General Headquarters and its solution in the World War. (Ws & Wr—Feb 1936)

#### COUNTERATTACK

The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)

#### CRYPTOGRAPHY

Encoding methods. (Bul Belge Mil—Mar 1936)

#### CZECHOSLOVAKIA (ARMY OF)

The national defense law of Czechoslovakia. (Mil-Woch—18 May 1936)

#### D

#### DELAYING ACTION

Antitank defense in defense and delaying action. (Mil-Woch—11 May 1936)

#### DISARMAMENT

Can methods of warfare be restricted? (Jour RUSI—May 1936)

#### E

#### ECONOMICS

Taxation, loans and defence. (AN&AF Gaz—30 Apr 1936)  
Food supply the first line of defence. (AN&AF Gaz—21 May 1936)  
The situation in the Far East. (Jour RUSI—May 1936)

#### ENGINEERS

Aerial photography on tropical surveys. (Mil Eng—May-Jun 1936)

Cape Cod Canal bridges. (Mil Eng—May-Jun 1936)  
 Atlantic-Gulf Ship Canal. (Mil Eng—May-Jun 1936)  
 The new motor equipment of the combat engineer regiment. (Mil Eng—May-Jun 1936)  
 Muskingum River flood control. (Mil Eng—May-Jun 1936)  
 Strategic mineral supplies. 7. Platinum. (Mil Eng—May-Jun, Jul-Aug 1936)  
 The bombing of Mauna Loa, 1935. (Mil Eng—Jul-Aug 1936)  
 The port of Miami, Florida. (Mil Eng—Jul-Aug 1936)  
 Divisional engineers in the advance. (Mil Eng—Jul-Aug 1936)  
 The Fort Monroe seawall. (Mil Eng—Jul-Aug 1936)  
 Demolition tests in the Tennessee Valley. (Mil Eng—Jul-Aug 1936)  
 A progressive engineering branch for the R.A.F. (RAF Quar—Jul 1936)  
 Exploration and excavations in Palestine. (Roy Eng Jour—Jun 1936)  
 Engineer orders. (Roy Eng Jour—Jun 1936)  
 Engineers and infantry. (Bul Belge Mil—Mar 1936)  
 Views relative to the organization of independent machine-gun units. (Mil-Woch—18 Mar 1936)  
 Motorization and blocking operations. (Pion—Feb 1936)  
 Motorization and mechanization of the engineers in the British Army. (Pion—Feb 1936)  
 Examples of the employment of motorized engineers. (Pion—Feb 1936)  
 Germany's fortification at the beginning of the World War. (Pion—Feb 1936)  
 The forts of Verdun in battle. (Rv Mil Fran—Jan 1936)  
 Use of television in war. (Riv Art e Gen—Nov-Dec 1935)  
 River defense. (Riv Art e Gen—Jan 1936)  
 Rapid movement in war based on motorization and employment of engineers. (Riv Art e Gen—Jan 1936)  
 Problems of roads and movement. (Riv Art e Gen—Feb 1936)  
 Employment of engineers at river crossings. (Riv Art e Gen—Feb 1936)

#### ENVIRONMENT

Employment of motorized machine gun battalions. [See Section 2]

#### F

FOCH, Marshal Ferdinand (1851-1929)  
 Souvenirs sur Foch. (Jour R Art—Jul 1936)

#### FORTIFICATIONS

Demolition tests in the Tennessee Valley. (Mil Eng—Jul-Aug 1936)  
 San Juan de Ulua under the American flag. (Nav Inst Proc—Aug 1936)  
 The operative role of the German western fortresses in 1914. (Mil-Woch—18 May 1936)  
 Germany's fortification at the beginning of the World War. (Pion—Feb 1936)  
 The forts of Verdun in battle. (Rv Mil Fran—Jan 1936)

#### FRANCE (ARMY OF)

##### Command and Staff

Marshal Pétain wants a Ministry of Defence. (AN&AF Gaz—21 May 1936)

##### Organization and Equipment

Lighter than air in 1936. (AN&AF Gaz—25 Jun 1936)  
 The French air division of 1918. (Mil-Woch—25 Mar 1936)  
 The official doctrine of French military aviation. (Rv l'Air—Feb 1936)

Memories of the early days of French military aviation. (Rv l'Air—Feb 1936)  
 The beginning of the French Army. (Rv d'Inf—Jan 1936)  
 Creation of parachute companies. (Rv d'Inf—Feb 1936)  
 Imperial forces establish contact in the Sahara. (Rv Mil Fran—Jan 1936)  
 New armored vehicles and anti-armor defensive weapons throughout the world. (Sanct Chris—Feb 1936)

#### Training Tactics

The French Official History: 1st of May, 1918—18th of July, 1918. (A Quar—Jul 1936)  
 Antiaircraft defense in France. (CA Jour—Jul-Aug 1936)  
 Divergent principles for meeting engagements based on German and French regulations. [See Section 2]  
 A few principles of instruction. (Rv d'Inf—Feb 1936)  
 Infantry on foot. A division maneuver. (Rv d'Inf—Mar 1936)

#### FUTURE WARFARE

Meteorology in the next war. (Chem War—Jul 1936)

#### G

#### GEOGRAPHY (MILITARY)

"The effect of the development of air power on British interests in the Mediterranean." (Jour RUSI—May 1936)

#### GERMANY (ARMY OF)

##### Command and Staff

Military propaganda in the Army. (Mil-Woch—11 May 1936)  
 Field Marshal Count von Haeseler, 19 January 1936-26 October 1919. (Ws & Wr—Jan 1936)

##### Organization and Equipment

Lighter than air in 1936. (AN&AF Gaz—25 Jun 1936)  
 The German Infantry Training Manual. (A Quar—Jul 1936)  
 Veterinary statistics of the German Army for 1932. (Bul Belge Mil—Mar 1936)  
 Combating machine guns in the attack. (Mil-Woch—11 Apr 1936)  
 Segregated for training—united for combat. (Mil-Woch—4 May 1936)  
 Germany's fortification at the beginning of the World War. (Pion—Feb 1936)

##### Training

Tactical doctrine up-to-date: Field Service Regulations, Part II, 1935. (A Quar—Jul 1936)  
 The German Infantry Training Manual. (A Quar—Jul 1936)  
 The reoccupation of the Rhine zone. (Jour RUSI—May 1936)  
 Divergent principles for meeting engagements based on German and French regulations. [See Section 2]  
 Motor sports in Germany. (Bul Belge Mil—Jan, Feb 1936)  
 Segregated for training—united for combat. (Mil-Woch—4 May 1936)  
 Physical training in the Army. (Mil-Woch—11 May 1936)  
 Germany: Action of a reinforced regiment during a withdrawal. (Rv d'Inf—Feb 1936)  
 Notes on the new German infantry training regulations: rifle companies. (Rv d'Inf—Mar 1936)  
 Address at the reopening of the German War College. (Rv Mil Fran—Feb 1936)  
 Tactical problems. (Sanct Chris—Jan, Feb, Mar 1936)

## GOL-HUN

GOLTZ, Field Marshal Kolmar von der (1843-1916)  
Field Marshal Count von der Goltz. (Mil-Woch  
—11 Apr 1936)

### GREAT BRITAIN (ARMY OF)

#### Auxiliary Military Forces

Modernizing O.T.C. training. (A Quar—Jul 1936)  
The future of the Territorial Army. (Jour R  
Art—Jul 1936)

The British military regime in Egypt as the  
nucleus of the Anglo-Egyptian problems. Its  
development since 1919. (Mil-Woch—11 May  
1936)

#### Command and Staff

Relations between the Government, the armed  
forces, and industry in the co-ordination of the  
national war effort. (Jour R Art—Jul 1936)

A junior school of tactics and leadership. (Jour  
RUSI—May 1936)

The British military regime in Egypt as the  
nucleus of the Anglo-Egyptian problems. Its  
development since 1919. (Mil-Woch—11 May  
1936)

The co-ordination of defence. (AN&AF Gaz—  
28 May 1936)

The dearth of army recruits. (A Quar—Jul 1936)

The new F.S.R. (Ftg Forc—Jun 1936)

#### Organization and Equipment

The raising of the Ironsides. (AN&AF Gaz—  
18 Jun 1936)

The Royal Air Force display. (AN&AF Gaz—  
25 Jun 1936)

Royal Air Force expansion. (AN&AF Gaz—25  
Jun 1936)

Display of British aircraft. (AN&AF Gaz—2  
Jul 1936)

The dearth of army recruits. (A Quar—Jul 1936)

The origin of British light infantry regiments. (A  
Quar—Jul 1936)

The Yeomanry at Gaza. Part III (October 27th  
—November 6th, 1917). (Cav Jour [GB]—  
Jul 1936)

Cavalry conversions old and new. (Cav Jour  
[GB]—Jul 1936)

Echoes of the past. A surgeon of the Royal  
Artillery. (Jour R Art—Jul 1936)

The future of the Territorial Army. (Jour R  
Art—Jul 1936)

"The effect of the development of air power on  
British interests in the Mediterranean." (Jour  
RUSI—May 1936)

Mohforce Signals in the Nahakki Operation, 18th  
September 1935. (Jour USII—Apr 1936)

With the Tibet detachments. (Jour USII—Apr  
1936)

A progressive engineering branch for the R.A.F.  
A reply. (RAF Quar—Jul 1936)

Motorization and mechanization. Great Britain:  
Trucks on tracks. (Bul Belge Mil—Mar 1936)

Ideas relative to the improvement of the British  
Army. (Mil-Woch—18 Apr 1936)

Motorization and mechanization of the engineers  
in the British Army. (Pion—Feb 1936)

New armored vehicles and anti-armor defensive  
weapons throughout the world. (Sanct Chris—  
Feb 1936)

#### Training

Tactical doctrine up-to-date: Field Service Reg-  
ulations, Part II, 1935. (A Quar—Jul 1936)

Modernizing O.T.C. training. (A Quar—Jul 1936)

Field Service Regulations, Vols. II and III, 1935.  
(Can Def Quar—Jul 1936)

The new F.S.R. (Ftg Forc—Jun 1936)

Physical training. (Ftg Forc—Jun 1936)

A junior school of tactics and leadership. (Jour  
RUSI—May 1936)

Mohforce Signals in the Nahakki Operation, 18th  
September 1935. (Jour USII—Apr 1936)

Minor tactics training. (Jour USII—Apr 1936)

Military and technical training in the British  
Army. (Mil-Woch—18 May 1936)

Great Britain: Protection of columns against  
aviation at night. (Rv d'Inf—Jan 1936)  
Armored and motorized units in the maneuvers  
of foreign armies. (Sanct Chris—Jan 1936)

### GREAT BRITAIN (NAVY OF)

Strength of the Navy. (AN&AF Gaz—4 Jun  
1936)

Physical training. (Ftg Forc—Jun 1936)

The lower deck, past and present. (Jour RUSI—  
May 1936)

Great Britain: Hydroaviation at the last maneu-  
vers of the British fleet. (Bul Belge Mil—Feb  
1936)

### GREECE (ARMY OF)

The Greek Army. (Bul Belge Mil—Feb 1936)

### GUATEMALA (ARMY OF)

Guatemala: The approach march. (Rv d'Inf—  
Mar 1936)

## H

HAESLER, Field Marshal Count von (1836-1919)

Field Marshal Count von Haeseler, 19 January  
1836-26 October 1919. (Ws & Wr—Jan 1936)

HAIG, Field Marshal Sir Douglas (1861-1928)

The Haig of Duff Cooper. (AN&AG Gaz—7  
May 1936)

### HISTORY (MILITARY)

Notes on the keeping of war diaries. (RASC  
Quar—May 1936)

### HISTORY

#### China

The situation in the Far East. (Jour RUSI—May  
1936)

#### France

French politics in Central Africa. (Ws & Wr—  
Feb 1936)

#### Germany

The mysterious treaty. (Can Def Quar—Jul 1936)

"Reichsarbeitsdienst." (Mil Eng—Jul-Aug 1936)

#### Guam

Why Guam alone is American. (Nav Inst Proc—  
Aug 1936)

#### Hawaii

History of the Hawii National Guard. (QM Rev  
—May-Jun, Jul-Aug 1936)

#### Japan

The situation in the Far East. (Jour RUSI—  
May 1936)

#### Mexico

San Juan de Ulua under the American flag. (Nav  
Inst Proc—Aug 1936)

#### Palestine

A battleground of the ages. (Mil Eng—Jul-Aug  
1936)

#### Philippine Islands

Is Philippine neutrality practicable? (Inf Jour—  
May-Jun 1936)

#### Poland

The mysterious treaty. (Can Def Quar—Jul 1936)

#### United States

Why Guam alone is American. (Nav Inst Proc  
—Aug 1936)

San Juan de Ulua under the American flag. (Nav  
Inst Proc—Aug 1936)

### HUNGARY (ARMY OF)

Armored and motorized units in the maneuvers  
of foreign armies. (Sanct Chris—Jan 1936)

## INFANTRY

## Organization and Equipment

- Three infantry, not one infantry. (AN&AF Gaz—14 May 1936)  
 The Infantry Division Ordnance Maintenance Company. (A Ord—Mar-Apr 1936)  
 The origin of British light infantry regiments. (A Quar—Jul 1936)  
 The Fourth Battalion. (Inf Jour—May-Jun 1936)  
 The new army game. (Inf Jour—May-Jun 1936)  
 The infantry and the Medical Department in war. (Mil Surg—Aug 1936)  
 Horse or motor power? Ideas on the organization and use of the antitank company of the infantry regiment. (Bul Belge Mil—Mar 1936)  
 Motorized reconnaissance detachments of large infantry units. (Mil-Woch—25 Mar 1936)  
 Motorized infantry. (Mil-Woch—4 Apr 1936)  
 Foreign infantry: Polish infantry. (Rv d'Inf—Jan 1936)  
 Modern trends in foreign infantry. (Rv d'Inf—Feb 1936)  
 Italy: Accompanying artillery. (Rv d'Inf—Feb 1936)  
 Infantry command posts. (Rv Mil Suisse—Mar 1936)  
 Accompanying battery with an infantry regiment. (Riv Art e Gen—Jan 1936)  
 The armament of the Italian infantry. (Riv Art e Gen—Feb 1936)  
 Influence of infantry armament on division artillery. (Riv Art e Gen—Feb 1936)

## Training Tactics

- Three infantry, not one infantry. (AN&AF Gaz—14 May 1936)  
 The Infantry Division Ordnance Maintenance Company. (A Ord—Mar-Apr 1936)  
 The German Infantry Training Manual. (A Quar—Jul 1936)  
 Modern umpiring. (Inf Jour—May-Jun 1936)  
 Achtung Tankminen!!! (Inf Jour—May-Jun 1936)  
 Training for the next war. (Inf Jour—May-Jun 1936)  
 S I C. (Security—Information—Contact.) (Inf Jour—May-Jun 1936)  
 The scorpion attack. (Inf Jour—May-Jun 1936)  
 Kitchen soldiering. (Inf Jour—May-Jun 1936)  
 Sing something simple. (Inf Jour—May-Jun 1936)  
 Don't kid the shock troops. (Inf Jour—Jul-Aug 1936)  
 The infantry and the medical department in war. (Inf Jour—Jul-Aug 1936)  
 Miniature ranges. (Inf Jour—Jul-Aug 1936)  
 Antitank defense. (Inf Jour—Jul-Aug 1936)  
 The infantry and the Medical Department in war. (Mil Surg—Aug 1936)  
 Night combat. (Bul Belge Mil—Jan 1936)  
 Engineers and infantry. (Bul Belge Mil—Mar 1936)  
 Motorized reconnaissance detachments of large infantry units. (Mil-Woch—25 Mar 1936)  
 Artillery organization. (Mil-Woch—18 Apr 1936)  
 Combating artillery during the attack. (Mil-Woch—4 May 1936)  
 Views of a battalion commander on infantry-artillery liaison. (Rv d'Art—Feb 1936)  
 The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)  
 Procedure for calculating safety in machine-gun fire. (Rv d'Inf—Jan 1936)  
 Infantry-tank liaison. (Rv d'Inf—Jan 1936)  
 Rumania: Action of aviation cooperating with infantry. (Rv d'Inf—Jan 1936)  
 The French 17th Division and the German VIII Corps at Gedinne-Houdremont-Bievre-Moncaeu: 23 August 1914. (Rv d'Inf—Feb, Mar 1936)  
 Modern trends in foreign infantry. (Rv d'Inf—Feb 1936)

- Procedure of representing fire effect. (Rv d'Inf—Feb 1936)  
 A few principles of instruction. (Rv d'Inf—Feb 1936)  
 Germany: Action of a reinforced regiment during a withdrawal. (Rv d'Inf—Feb 1936)  
 Infantry on foot. A division maneuver. (Rv d'Inf—Mar 1936)  
 Notes on the new German infantry training regulations: Rifle companies. (Rv d'Inf—Mar 1936)  
 Instruction of infantry leaders—study of concrete examples—advance through woods. (Rv d'Inf—Mar 1936)  
 The use of artillery against mechanized vehicles. (Rv Mil Fran—Mar 1936)  
 Infantry tactics. (Rv Mil Suisse—Jan, Feb, Mar 1936)

## INTELLIGENCE (MILITARY)

- S I C. (Security—Information—Contact.) (Inf Jour—May-Jun 1936)  
 Air intelligence—The army's safeguard. (RAF Quar—Jul 1936)  
 The G-2 Signals team. (SC Bul—May-Jun 1936)

## INTERNATIONAL RELATIONS

- The laws and usages of war on land. (AN&AF Gaz—14 May 1936)  
 Military prize essay, 1936. (A Quar—Jul 1936)  
 The new naval treaty. (Can Def Quar—Jul 1936)  
 The mysterious treaty. (Can Def Quar—Jul 1936)  
 Is Philippine neutrality practicable? (Inf Jour—May-Jun 1936)  
 "The effect of the development of air power on British interests in the Mediterranean." (Jour RUSI—May 1936)  
 Can methods of warfare be restricted? (Jour RUSI—May 1936)  
 The situation in the Far East. (Jour RUSI—May 1936)  
 The reoccupation of the Rhine zone. (Jour RUSI—May 1936)  
 The Franco-Soviet Pact. (Jour RUSI—May 1936)  
 The Italo-Abyssinian War. (Jour RUSI—May 1936)  
 The collapse of collective security. (Mil Eng—Jul-Aug 1936)  
 Pressures against peace. (Nav Inst Proc—May 1936)  
 Railroad construction race between Soviet Russia and Japan. (Mil-Woch—25 Apr 1936)  
 The origin of the Italo-Ethiopian relations. (Rv d'Art—Jan 1936)  
 Japan as champion of the Asiatic Monroe Doctrine. (Ws & Wr—Mar 1936)

## ITALY (ARMY OF)

- The Italian Army. The Fascist ideal of arms and state. (A Ord—Mar-Apr 1936)  
 Italy and Abyssinia. (A Quar—Jul 1936)  
 Italian air force in the Abyssinian War. (Mil-Woch—11 Apr 1936)  
 Italy: Accompanying artillery. (Rv d'Inf—Feb 1936)  
 The armament of the Italian infantry. (Riv Art e Gen—Feb 1936)  
 Armored and motorized units in the maneuvers of foreign armies. (Sanct Chris—Jan 1936)

J

## JAPAN (ARMY OF)

- The situation in the Far East. (Jour RUSI—May 1936)  
 The influence of the fighting services in Japan. (Jour RUSI—May 1936)  
 Railroad construction race between Soviet Russia and Japan. (Mil-Woch—25 Apr 1936)  
 Japan as champion of the Asiatic Monroe Doctrine. (Ws & Wr—Mar 1936)

## JAPAN (NAVY OF)

- The influence of the fighting services in Japan. (Jour RUSI—May 1936)

Japanese merchant marine history. (Nav Inst Proc—Jul 1936)

## JOINT OPERATIONS

The landings at Gallipoli if carried out to-day. (A Quar—Jul 1936)  
The defence of Canada. (Can Def Quar—Jul 1936)  
Forms of attack against harbor defenses. (CA Jour—May-Jun 1936)  
The invasion and capture of the Baltic Islands. (Inf Jour—Jul-Aug 1936)  
Pack howitzer battery in landing attack. (MC Gaz—May 1936)  
An introduction of the Gallipoli Campaign. (MC Gaz—May 1936)  
Searchlight barrage in night landings. (Nav Inst Proc—Jun 1936)  
The landing at Anzac. [See Section 2]  
Naval cooperation with the Army. (Mil-Woch—25 Mar, 25 Apr 1936)  
Lessons from the Dardanelles Campaign, 1915. (Ws & Wr—Jan 1936)

## LARGE UNITS

### L

#### Army

The last chance—Second campaign of the Marne. (FA Jour—May-Jun 1936)

#### Corps

The last chance—Second campaign of the Marne. (FA Jour—May-Jun 1936)  
The French 17th Division and the German VIII Corps at Gedinne—Houdremont—Bievre—Monceau: 23 August 1914. (Rv d'Inf—Feb, Mar 1936)

#### Division

The 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
The French 17th Division and the German VIII Corps at Gedinne—Houdremont—Bievre—Monceau: 23 August 1914. (Rv d'Inf—Feb, Mar 1936)  
Infantry on foot. A division maneuver. (Rv d'Inf—Mar 1936)

## LAW (MILITARY AND INTERNATIONAL)

The laws and usages of war on land. (AN&AF Gaz—14 May 1936)  
The "Minute Men" of Canada. (MC Gaz—May 1936)  
The changes in the Courtmartial Manual and Disciplinary Regulations. (Mil-Woch—18 Apr 1936)

## LAWRENCE, Captain James (1781-1813)

The case of Captain Lawrence. (Nav Inst Proc—Jul 1936)

## LEADERSHIP

Allenby: An appreciation. (A Quar—Jul 1936)  
The apprentice strategist. (Inf Jour—Jul-Aug 1936)  
Book-learnin' leadership. (Nav Inst Proc—Jun 1936)  
Courage is not enough. (Nav Inst Proc—Jul 1936)  
The case of Captain Lawrence. (Nav Inst Proc—Jul 1936)  
Essentials of leadership. [See Section 1]  
The exercise of command. [Rv l'Air—Feb 1936]  
A few principles of instruction. (Rv d'Inf—Feb 1936)

## LEAGUE OF NATIONS

The reoccupation of the Rhine zone. (Jour RUSI—May 1936)  
The collapse of collective security. (Mil Eng—Jul-Aug 1936)

## LIAISON

The infantry and the medical department in war. (Inf Jour—Jul-Aug 1936)  
"Give us our own eyes," or "You have the best stalls—we want them." (Jour R Art—Jul 1936)  
Maneuver and fire direction of the 75-mm. battalion of division artillery. [See Section 2]  
Engineers and infantry. (Bul Belge Mil—Mar 1936)  
The air arm and naval forces. (Mil-Woch—18 Apr 1936)  
Views of a battalion commander on infantry-artillery liaison. (Rv d'Art—Feb 1936)  
Infantry-tank liaison. (Rv d'Inf—Jan 1936)  
Rumania: Action of aviation cooperating with infantry. (Rv d'Inf—Jan 1936)

### M

## MACHINE GUNS

Protection of marching columns. (CA Jour—May-Jun 1936)  
Organization of AA. machine guns. (CA Jour—May-Jun 1936)  
Employment of motorized machine gun battalions. [See Section 2]  
Artillery matériel and heavy machine guns descended from the War.—III: Improvements in artillery matériel since 1914-18. (Bul Belge Mil—Jan, Feb 1936)  
Combating automatic weapons in the attack. (Mil-Woch—11 Mar 1936)  
Views relative to the organization of independent machine-gun units. (Mil-Woch—18 Mar 1936)  
Combating machine guns in the attack. (Mil-Woch—11 Apr 1936)  
Basic training for the sub-machine gun. (Mil-Woch—25 Apr 1936)  
Procedure for calculating safety in machine-gun fire. (Rv d'Inf—Jan 1936)

## MANEUVERS

The 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
1st Cavalry Division railroad at Marfa, Texas, April-May 1936. (Cav Jour—May-Jun 1936)  
Ordnance field service operations during the 1st Cavalry Division Maneuvers. (Cav Jour—May-Jun 1936)  
March of 1st Cavalry Brigade to and from the 1936 division maneuvers. (Cav Jour—May-Jun 1936)  
March of 2d Cavalry Brigade to and from the 1936 division maneuvers. (Cav Jour—May-Jun 1936)  
Diseases and injuries of animals of the 7th Cavalry on the marches and during the 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
Use of compressed hay cube component of the forage ration. (Cav Jour—May-Jun 1936)  
Tactical formations for the cavalry regiment. (Cav Jour—May-Jun 1936)  
Artillery notes on the Marfa maneuvers. (FA Jour—Jul-Aug 1936)  
The Fourth Battalion. (Inf Jour—May-Jun 1936)  
Modern umpiring. (Inf Jour—May-Jun 1936)  
Meteorological service for the 1936 G.H.Q. Air Force Winter Maneuver in New England. (SC Bul—Jul-Aug 1936)  
Maneuver and fire direction of the 75-mm. battalion of division artillery. [See Section 2]  
Infantry on foot. A division maneuver. (Rv d'Inf—Mar 1936)  
Armored and motorized units in the maneuvers of foreign armies. (Sanct Chris—Jan 1936)  
New armored vehicles and anti-armor defensive weapons throughout the world. (Sanct Chris—Feb 1936)

## MAP PROBLEMS

A method of conducting the march of a battalion of light artillery as part of an advance guard

when contact is imminent. (FA Jour—May-Jun 1936)  
Tactical problems. (Sanct Chris—Jan, Feb, Mar 1936)

### MARCHES

The 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
1st Cavalry Division railroad at Marfa, Texas, April-May 1936. (Cav Jour—May-Jun 1936)  
March of 1st Cavalry Brigade to and from the 1936 division maneuvers. (Cav Jour—May-Jun 1936)  
March of 2d Cavalry Brigade to and from the 1936 division maneuvers. (Cav Jour—May-Jun 1936)  
Diseases and injuries of animals of the 7th Cavalry on the marches and during the 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
Tactical formations for the cavalry regiment. (Cav Jour—May-Jun 1936)  
Protection of marching columns. (CA Jour—May-Jun 1936)  
A method of conducting the march of a battalion of light artillery as part of an advance guard when contact is imminent. (FA Jour—May-Jun 1936)  
Antitank defense. (Inf Jour—Jul-Aug 1936)  
Employment of tanks with an army. (Mil Mitt—Jan 1936)  
The employment of the antitank company for march security. (Mil-Woch—11 Mar 1936)  
Shall there be artillery in the advance guard? (Mil-Woch—11 Apr 1936)  
The march on Kiev. (Rv de Cav—Jan-Feb 1936)  
Great Britain: Protection of columns against aviation at night. (Rv d'Inf—Jan 1936)  
Armored and motorized units in the maneuvers of foreign armies. (Sanct Chris—Jan 1936)  
The employment of antitank weapons. (Sanct Chris—Feb 1936)

### MARINE CORPS

The role of the Marine Corps Schools. (MC Gaz—May 1936)  
The "Minute Men" of Canada. (MC Gaz—May 1936)  
Pack howitzer battery in landing attack. (MC Gaz—May 1936)  
McCLELLAN, Major General George Brinton (1826-1885)  
And an American. (Inf Jour—Jul-Aug 1936)

### MECHANIZATION

First Cavalry (Mechanized). (A Ord—Mar-Apr 1936)  
Tactical doctrine up-to-date: Field Service Regulations, Part II, 1935. (A Quar—Jul 1936)  
The 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
Mohforce Signals in the Nahakki Operation. (Jour USII—Apr 1936)  
The equipping of field units with their mechanical transport vehicles. (RASC Quar—May 1936)  
"Mechanised" Veterinary Service. (Vet Bul—Apr 1936)  
Motorization and mechanization. Great Britain: Trucks on tracks. (Bul Belge Mil—Mar 1936)  
A French conception on employment of tanks. (Mil-Woch—11 Mar 1936)  
The employment of the antitank company for march security. (Mil-Woch—11 Mar 1936)  
Motorization and mechanization of the engineers in the British Army. (Pion—Feb 1936)  
Modern trends in foreign infantry. (Rv d'Inf—Feb 1936)  
The use of artillery against mechanized vehicles. (Rv Mil Fran—Mar 1936)  
River defense. (Riv Art e Gen—Jan 1936)  
Rapid movement in war based on motorization and employment of engineers. (Riv Art e Gen—Jan 1936)

Critical observations on antitank defense. (Sanct Chris—Jan 1936)  
Tactical problems. (Sanct Chris—Jan, Feb, Mar 1936)  
New armored vehicles and anti-armor defensive weapons throughout the world. (Sanct Chris—Feb 1936)

### MEDICAL SERVICE

Medical field equipment for the Air Corps. (A Med Bul—Apr 1936)  
Tactical study: An effect of motorization on medical tactics. (A Med Bul—Apr 1936)  
Annual report of The Surgeon General. (A Med Bul—Apr 1936)  
The medical contribution to the development of blind flying. (A Med Bul—Jul 1936)  
The physical examination for admission to the United States Military Academy: The height-weight tables. (A Med Bul—Jul 1936)  
The old army life. (FA Jour—May-Jun 1936)  
The infantry and the medical department in war. (Inf Jour—Jul-Aug 1936)  
Report on a series of tests performed to ascertain the efficiency of the ammonia chlorine treatment of water applied by a standardized method. (Jour RAMC—May 1936)  
Tetanus in warfare and the case for active immunization. (Jour RAMC—May 1936)  
The Doctor's War, 1899-1902. (Jour RAMC—May, Jun 1936)  
War experiences of a Territorial Medical Officer. (Jour RAMC—May, Jun, Jul 1936)  
Medical tactics in mobile warfare. (Jour RAMC—Jun, Jul 1936)  
Chronic dental infection as a cause of inefficiency in the army. (Jour RAMC—Jun 1936)  
The use of the elastic adhesive dressing (Elastoplast) during annual training in camp. (Jour RAMC—Jul 1936)  
Echoes of the past. A surgeon of the Royal Artillery. (Jour R Art—Jul 1936)  
Field chlorination of water. (Mil Surg—May 1936)  
Mosquitoes of Fort DuPont, Delaware. (Mil Surg—May 1936)  
The Medical Reserve Corps. (Mil Surg—May 1936)  
Legislation affecting the Medical Department. (Mil Surg—Jul 1936)  
The treatment of war wounds. (Mil Surg—Jul 1936)  
The management of thyroid diseases in the soldier. (Mil Surg—Jul 1936)  
The division laboratory section. (Mil Surg—Jul 1936)  
Typhoid in the C.C.C. (Mil Surg—Jul 1936)  
Poliomyelitis in the Philippine Islands. (Mil Surg—Jul 1936)  
The infantry and the Medical Department in war. (Mil Surg—Aug 1936)  
Plastic surgery in relation to the armed forces; past, present and future. (Mil Surg—Aug 1936)  
Care of the war disabled prior to the World War. (Mil Surg—Aug 1936)  
Why Carlisle? (Mil Surg—Aug 1936)  
Mess economy. (QM Rev—May-Jun 1936)  
Medical aviation in North Africa and in French mandate territories of the Near East in 1934. (Bul Belge Mil—Feb 1936)

### MEETING ENGAGEMENTS

Antitank defense. (Inf Jour—Jul-Aug 1936)  
Divergent principles for meeting engagements based on German and French regulations. [See Section 2]  
Shall there be artillery in the advance guard? (Mil-Woch—11 Apr 1936)

### METEOROLOGY

Modern meteorology. (Chem War—Apr 1936)  
Meteorology in the next war. (Chem War—Jul 1936)  
Radiometeorography as applied to unmanned balloons. (SC Bul—Jul-Aug 1936)



Conquering Mauna Kea. (SC Bul—Jul-Aug 1936)  
 Meteorological service for the 1936 G.H.Q. Air  
 Force Winter Maneuver in New England. (SC  
 Bul—Jul-Aug 1936)

# MINING

Achtung Tankminen!!! (Inf Jour—May-Jun  
 1936)  
 Mine warfare on the Krain, 1917. (Mil Mitt—  
 Jan 1936)  
 New armored vehicles and anti-armor defensive  
 weapons throughout the world. (Sanct Chris  
 —Feb 1936)  
 Conduct of tanks when confronted with antitank  
 mines. (Sanct Chris—Mar 1936)

# MOBILE WARFARE

Medical tactics in mobile warfare. (Jour RAMC  
 —Jun, Jul 1936)  
 The organization of counter-battery work in  
 mobile warfare by a medium brigade allotted  
 to a division. (Jour R Art—Jul 1936)  
 Employment of motorized machine gun bat-  
 talions. (See Section 2)  
 Mobile forces in unoccupied areas. (Mil-Woch—  
 25 Apr 1936)

# MOBILITY

Tactical study: An effect of motorization on  
 medical tactics. (A Med Bul—Apr 1936)  
 The 1936 maneuvers of the 1st Cavalry Division.  
 (Cav Jour—May-Jun 1936)  
 The Fourth Battalion. (Inf Jour—May-Jun 1936)  
 Bomber aircraft—A reply. (RAF Quar—Jul 1936)  
 Notes on the motorization of the Second Signal  
 Company. (SC Bul—Jul-Aug 1936)  
 Field Service Regulations of the future. (See  
 Section 1)  
 Motorized reconnaissance detachments of large  
 infantry units. (Mil-Woch—25 Mar 1936)  
 The problem of speed in modern tactics. (Mil-  
 Woch—4 Apr 1936)  
 Rapid movement in war based on motorization  
 and employment of engineers. (Riv Art e Gen  
 —Jan 1936)  
 Problems of roads and movement. (Riv Art e  
 Gen—Feb 1936)

# MOBILIZATION

## Industrial Mobilization

American defence policy. (AN&AF Gaz—2 Jul  
 1936)  
 Military supply. Industry should be prepared for  
 its war mission. (A Ord—Mar-Apr 1936)  
 Relations between the Government, the armed  
 forces, and industry in the co-ordination of the  
 national war effort. (Jour R Art—Jul 1936)  
 Industrial mobilization. (Rv Mil Fran—Feb 1936)  
 Industrial mobilization. (Ws & Wr—Mar 1936)

# MOTORIZATION

Tactical study: An effect of motorization on  
 medical tactics. (A Med Bul—Apr 1936)  
 Tactical doctrine up-to-date: Field Service Reg-  
 ulations, Part II, 1935. (A Quar—Jul 1936)  
 The 1936 maneuvers of the 1st Cavalry Division.  
 (Cav Jour—May-Jun 1936)  
 Proposed two-wheeled ambulance trailer for  
 veterinary cases. (Cav Jour—May-Jun 1936)  
 A practical improvised radio truck. (CA Jour—  
 May-Jun 1936)  
 An experiment in specialization. (FA Jour—May-  
 Jun 1936)  
 The maintenance of field artillery motorized units  
 and the control of its supply trains. (FA Jour  
 —May-Jun 1936)  
 Diesel motors as power plants in army vehicles.  
 (FA Jour—Jul-Aug 1936)  
 The Fourth Battalion. (Inf Jour—May-Jun 1936)  
 The new motor equipment of the combat engineer  
 regiment. (Mil Eng—May-Jun 1936)  
 Maintaining the motor transport of a field army.  
 (QM Rev—May-Jun 1936)

The equipping of field units with their mechanical  
 transport vehicles. (RASC Quar—May 1936)  
 Notes on the motorization of the Second Signal  
 Company. (SC Bul—Jul-Aug 1936)  
 Employment of motorized machine gun bat-  
 talions. (See Section 2)  
 Motor sports in Germany. (Bul Belge Mil—  
 Jan, Feb 1936)  
 Motorization in different armies. (Bul Belge Mil  
 —Jan 1936)  
 Horse or motor power? Ideas on the organization  
 and use of the antitank company of the infan-  
 try regiment. (Bul Belge Mil—Mar 1936)  
 Motorization and mechanization. Great Britain:  
 Trucks on tracks. (Bul Belge Mil—Mar 1936)  
 The employment of the antitank company for  
 march security. (Mil-Woch—11 Mar 1936)  
 Views relative to the organization of independent  
 machine-gun units. (Mil-Woch—18 Mar 1936)  
 Motorized reconnaissance detachments of large  
 infantry units. (Mil-Woch—25 Mar 1936)  
 Motorized infantry. (Mil-Woch—4 Apr 1936)  
 Motorization and blocking operations. (Pion-  
 Feb 1936)  
 Motorization and mechanization of the engineers  
 in the British Army. (Pion—Feb 1936)  
 Examples of the employment of motorized engi-  
 neers. (Pion—Feb 1936)  
 Warfare of the past and future. Motorized units  
 in the offensive. (Rv Mil Fran—Jan 1936)  
 Rapid movement in war based on motorization  
 and employment of engineers. (Riv Art e Gen  
 —Jan 1936)  
 Armored and motorized units in the maneuvers  
 of foreign armies. (Sanct Chris—Jan 1936)  
 Tactical problems. (Sanct Chris—Jan 1936)  
 The employment of antitank weapons. (Sanct  
 Chris—Feb 1936)  
 New armored vehicles and anti-armor defensive  
 weapons throughout the world. (Sanct Chris-  
 Feb 1936)

# MUSIC (MILITARY AND NAVAL)

Brief historical account of military bands. (Rv  
 d'Inf—Mar 1936)

## N

# NATIONAL DEFENSE

Taxation, loans and defence. (AN&AF Gaz—  
 30 Apr 1936)  
 Marshal Petain wants a Ministry of Defence.  
 (AN&AF Gaz—21 May 1936)  
 The co-ordination of defence. (AN&AF Gaz—  
 28 May 1936)  
 Our gas defence crisis. (AN&AF Gaz—11 Jun  
 1936)  
 American defence policy. (AN&AF Gaz—2 Jul  
 1936)  
 Military supply. Industry should be prepared for  
 its war mission. (A Ord—Mar-Apr 1936)  
 Oil and our national defence. (A Ord—Mar-Apr  
 1936)  
 Preparedness. We should face the future with  
 realistic minds. (A Ord—Mar-Apr 1936)  
 The defence of Canada. (Can Def Quar—Jul  
 1936)  
 Antiaircraft defense in France. (CA Jour—Jul-  
 Aug 1936)  
 Relations between the Government, the armed  
 forces, and industry in the co-ordination of the  
 national war effort. (Jour R Art—Jul 1936)  
 "The effect of the development of air power on  
 British interests in the Mediterranean." (Jour  
 RUSI—May 1936)  
 The influence of the fighting services in Japan.  
 (Jour RUSI—May 1936)  
 The collapse of collective security. (Mil Eng—  
 Jul-Aug 1936)  
 National defense in Canada. (Mil Eng—Jul-Aug  
 1936)  
 The principles of war and the R.A.F.—Security.  
 (RAF Quar—Jul 1936)



Speech by M.A. Devezé, Minister of National Defense, at the inauguration of the memorial to King Albert. (Bul Belge Mil—Jan 1936)  
The Belgian national defense since 1830. (Bul Belge Mil—Jan, Feb, Mar 1936)  
The national defense law of Czechoslovakia. (Mil-Woch—18 May 1936)

## NAVAL WARFARE

The new naval treaty. (Can Def Quar—Jul 1936)  
Sea power in the American Revolution. (Nav Inst Proc—Jun 1936)  
Searchlight barrage in night landings. (Nav Inst Proc—Jun 1936)  
Courage is not enough. (Nav Inst Proc—Jul 1936)  
The case of Captain Lawrence. (Nav Inst Proc—Jul 1936)  
Watchful Gideon. (Nav Inst Proc—Aug 1936)  
Picnic with Cushing. (Nav Inst Proc—Aug 1936)  
Present-day naval strategy in the Mediterranean. (Mil Mitt—Mar 1936)  
Naval cooperation with the Army. (Mil-Woch—25 Mar, 25 Apr 1936)  
The air arm and naval forces. (Mil-Woch—18 Apr 1936)  
Strategic defense in naval history. (Ws & Wr—Feb 1936)  
Naval warfare of tomorrow. (Ws & Wr—Mar 1936)

## NAVIGATION

Three simple navigational nomograms. (Nav Inst Proc—Aug 1936)  
The navigation problems of an air striking force. (RAF Quar—Jul 1936)

## NIGHT OPERATIONS

Night combat. (Bul Belge Mil—Jan 1936)  
Great Britain: Protection of columns against aviation at night. (Rv d'Inf—Jan 1936)

## O

### OBSTACLES

River defense. (Riv Art e Gen—Jan 1936)  
New armored vehicles and anti-armor defensive weapons throughout the world. (Sanct Chris—Feb 1936)  
Conduct of tanks when confronted with antitank mines. (Sanct Chris—Mar 1936)

### OPEN WARFARE

Lessons from the Dardanelles Campaign, 1915. (Ws & Wr—Jan 1936)

### ORDNANCE

Ordnance of the Confederacy. (A Ord—Mar-Apr 1936)  
The Infantry Division Ordnance Maintenance Company. (A Ord—Mar-Apr 1936)  
Ordnance field service operations during the 1st Cavalry Division Maneuvers. (Cav Jour—May-Jun 1936)  
The semi-automatic rifleman. (MC Gaz—May 1936)

### OVERSEAS EXPEDITIONS

The landings of Gallipoli if carried out to-day. (A Quar—Jul 1936)  
Pack howitzer battery in landing attack. (MC Gaz—May 1936)  
An introduction to the Gallipoli Campaign. (MC Gaz—May 1936)  
The landing at Anzac. [See Section 2]

## P

### PACIFISM

Preparedness. We should face the future with realistic minds. (A Ord—Mar-Apr 1936)

### PENETRATION

Battle of Picardy and the double penetration. (Inf Jour—May-Jun 1936)

Employment of motorized machine gun battalions. [See Section 2]

## PHOTOGRAPHY

### Aerial

Aerial photography on tropical surveys. (Mil Eng—May-Jun 1936)  
The air mapping of the North-West Frontier. (Roy Eng Jour—Jun 1936)

## POLAND (ARMY OF)

The Polish Army. (AN&F Gaz—11 Jun 1936)  
Foreign infantry: Polish infantry. (Rv d'Inf—Jan 1936)

## POSITION WARFARE

Lessons from the Dardanelles Campaign, 1915. (Ws & Wr—Jan 1936)

## PRINCIPLES OF WAR

General Douhet's doctrine of war. (CA Jour—Jul-Aug 1936)  
The principles of war and the R.A.F.—Security. (RAF Quar—Jul 1936)

## PRISONERS OF WAR

The laws and usages of war on land. (AN&F Gaz—14 May 1936)

## PROPAGANDA

Military propaganda in the Army. (Mil-Woch—11 May 1936)

## Q

### QUARTERMASTER SERVICE

1st Cavalry Division railroad at Marfa, Texas, April-May 1936. (Cav Jour—May-Jun 1936)  
Maintaining the motor transport of a field army. (QM Rev—May-Jun 1936)  
Mess economy. (QM Rev—May-Jun 1936)  
Guide for sales officers, U.S.A. (QM Rev—May-Jun 1936)  
The Quartermaster storehouse of knowledge. (QM Rev—May-Jun, Jul-Aug 1936)  
Behind the Bagdad front. (QM Rev—Jul-Aug 1936)  
Origin and function of The Quartermaster Corps. (QM Rev—Jul-Aug 1936)  
The delivery of supplies considered in the light of Training Memorandum No. 15. (RASC Quar—May 1936)  
The equipping of field units with their mechanical transport vehicles. (RASC Quar—May 1936)  
The main supply depot considered in the light of recent developments. (RASC Quar—May 1936)  
Notes on the keeping of war diaries. (RASC Quar—May 1936)

## R

### RECONNAISSANCE

Maneuver and fire direction of the 75-mm. battalion of division artillery. [See Section 2]  
Motorized reconnaissance detachments of large infantry units. (Mil-Woch—25 Mar 1936)  
Surprise. (Mil-Woch—18 Apr 1936)  
Reconnaissance with armored scout cars. (Mil-Woch—4 May 1936)  
Conduct of tanks when confronted with antitank mines. (Sanct Chris—Mar 1936)

### RIVER CROSSINGS

River defense. (Riv Art e Gen—Jan 1936)  
Employment of engineers at river crossings. (Riv Art e Gen—Feb 1936)

### ROUTES COMMUNICATIONS

#### Bridges Bridging

Cape Cod Canal bridges. (Mil Eng—May-Jun 1936)  
Rapid movement in war based on motorization and employment of engineers. (Riv Art e Gen—Jan 1936)

### Railways

- Strategic movement over damaged railways in 1914. (Jour RUSI—May 1936)
- Railroad construction race between Soviet Russia and Japan. (Mil-Woch—25 Apr 1936)

### RUMANIA (ARMY OF)

- Rumania: Action of aviation cooperating with infantry. (Rv d'Inf—Jan 1936)
- Rumania: Technical surprise. (Rv d'Inf—Jan 1936)

### RUSSIA (ARMY OF)

- The vicissitudes of a strategic manoeuvre. (AN&AG Gaz—23 Apr 1936)
- The Red Army. (Inf Jour—Jul-Aug 1936)
- Mobilization of the Russian Soviet Army. (Bul Belge Mil—Jan 1936)
- Railroad construction race between Soviet Russia and Japan. (Mil-Woch—25 Apr 1936)
- Soviet ideas on modern air combat. (Mil-Woch—4 May 1936)
- Physiology and the practice of parachute jumping. (Rv l'Air—Jan 1936)
- Creation of parachute companies. (Rv d'Inf—Feb 1936)
- Armored and motorized units in the maneuvers of foreign armies. (Sanct Chris—Jan 1936)

S

### SEAPOWER

- Sea power in the American Revolution. (Nav Inst Proc—Jun 1936)

### SECURITY

- Protection of marching columns. (CA Jour—May-Jun 1936)
- A method of conducting the march of a battalion of light artillery as part of an advance guard when contact is imminent. (FA Jour—May-Jun 1936)
- S I C. (Security—Information—Contact.) (Inf Jour—May-Jun 1936)
- The semi-automatic rifleman. (MC Gaz—May 1936)
- The principles of war and the R.A.F.—Security. (RAF Quar—Jul 1936)
- The employment of the antitank company for march security. (Mil-Woch—11 Mar 1936)
- Shall there be artillery in the advance guard? (Mil-Woch—11 Apr 1936)

- SEECKT, Major General Hans von (1866— )
- General v. Seeckt. (Mil-Woch—25 Apr 1936)

### SIGNAL COMMUNICATIONS

- Imperial cable and wireless communications. (Jour USII—Apr 1936)
- The army air alert net. (SC Bul—Jul-Aug 1936)
- Signal communication for the Civilian Conservation Corps. (SC Bul—Jul-Aug 1936)
- Maneuver and fire direction of the 75-mm. battalion of division artillery. [See Section 2]

### SIGNAL SERVICE

- Modern meteorology. (Chem War—Apr 1936)
- Meteorology in the next war. (Chem War—Jul 1936)
- A practical improvised radio truck. (CA Jour—May-Jun 1936)
- Mohforce Signals in the Nahakki Operation, 18th September 1935. (Jour USII—Apr 1936)
- Imperial cable and wireless communications. (Jour USII—Apr 1936)
- The G-2 Signals team. (SC Bul—May-Jun 1936)
- Notes on the motorization of the Second Signal Company. (SC Bul—Jul-Aug 1936)
- The army air alert net. (SC Bul—Jul-Aug 1936)
- Signal communication for the Civilian Conservation Corps. (SC Bul—Jul-Aug 1936)
- Power and limitations of radio communication within a modern field army. (SC Bul—Jul-Aug 1936)

- Radio communication with the Byrd Expedition. (SC Bul—Jul-Aug 1936)
- Printing telegraph systems. (SC Bul—Jul-Aug 1936)
- Radiometeorography as applied to unmanned balloons. (SC Bul—Jul-Aug 1936)
- Accuracy before speed. (SC Bul—Jul-Aug 1936)
- Conquering Mauna Kea. (SC Bul—Jul-Aug 1936)
- Meteorological service for the 1936 G.H.Q. Air Force Winter Maneuver in New England. (SC Bul—Jul-Aug 1936)
- Maneuver and fire direction of the 75-mm. battalion of division artillery. [See Section 2]
- Encoding methods. (Bul Belge Mil—Mar 1936)
- Guiding aircraft by means of radio telephone. (Mil-Woch—25 Mar 1936)
- Communications equipment and the radio in the Chaco War. (Mil-Woch—18 Apr 1936)
- Direct telephonic communications by mixed circuits (radio and telephone). (Rv d'Art—Mar 1936)
- Use of television in war. (Riv Art e Gen—Nov-Dec 1935)

### SUPPLY

- Food supply the first line of defence. (AN&AF Gaz—21 May 1936)
- War reserve granaries. (AN&AF Gaz—4 Jun 1936)
- Food supply in war time. (AN&AF Gaz—16 Jul 1936)
- Military supply. Industry should be prepared for its war mission. (A Ord—Mar-Apr 1936)
- Oil and our national defense. (A Ord—Mar-Apr 1936)
- The Infantry Division Ordnance Maintenance Company. (A Ord—Mar-Apr 1936)
- Military prize essay, 1936. (A Quar—Jul 1936)
- The air doctrine of central shock and its effect upon supply. (A Quar—Jul 1936)
- 1st Cavalry Division railhead at Marfa, Texas, April-May 1936. (Cav Jour—May-Jun 1936)
- Protection of food and forage. (Chem War—Jul 1936)
- The maintenance of field artillery motorized units and the control of its supply trains. (FA Jour—May-Jun 1936)
- Relations between the Government, the armed forces, and industry in the co-ordination of the national war effort. (Jour R Art—Jul 1936)
- Strategic mineral supplies. 7. Platinum. (Mil Eng—May-Jun, Jul-Aug 1936)
- The Navy material inspection service. (Nav Inst Proc—Aug 1936)
- The delivery of supplies considered in the light of Training Memorandum No. 15. (RASC Quar—May 1936)
- The main supply depot considered in the light of recent developments. (RASC Quar—May 1936)
- War demands and their supply as a problem to military leaders. (Ws & Wr—Feb 1936)
- 1915 and the industrial war. (Ws & Wr—Feb 1936)
- Industrial mobilization. (Ws & Wr—Mar 1936)

### SURPRISE

- An analysis of tactical surprise. (A Quar—Jul 1936)
- The semi-automatic rifleman. (MC Gaz—May 1936)
- Views on the surprise attack on Liege. (Mil-Woch—11 Mar 1936)
- Surprise. (Mil-Woch—18 Apr 1936)
- The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)
- Rumania: Technical surprise. (Rv d'Inf—Jan 1936)

### SWITZERLAND (ARMY OF)

- Infantry tactics. (Rv Mil Suisse—Jan, Feb, Mar 1936)
- Defense of villages. (Rv Mil Suisse—Jan 1936)
- Swiss field post office. (Rv Mil Suisse—Mar 1936)

## T

## TACTICS OPERATIONS

## Defensive Combat

Tactical doctrine up-to-date: Field Service Regulations, Part II, 1935. (A Quar—Jul 1936)  
 The air doctrine of central shock and its effect upon supply. (A Quar—Jul 1936)  
 The 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
 Field Service Regulations of the future. [See Section 1]  
 With reference to passive defense (against aircraft). (Bul Belge Mil—Jan 1936)  
 Future protection of headquarters and command posts. (Bul Belge Mil—Feb 1936)  
 Employment of tanks with an army. (Mil Mitt—Jan 1936)  
 Antitank defense. (Mil-Woch—18 Apr 1936)  
 Super tanks and defense against them. (Mil-Woch—25 Apr 1936)  
 Antitank defense in defense and delaying action. (Mil-Woch—11 May 1936)  
 Correct or incorrect methods of antitank defense. (Mil-Woch—18 May 1936)  
 Motorization and blocking operations. (Pion—Feb 1936)  
 Germany: Action of a reinforced regiment during a withdrawal. (Rv d'Inf—Feb 1936)  
 Warfare of the past and future. Motorized units in the offensive. (Rv Mil Fran—Jan 1936)  
 Defense of villages. (Rv Mil Suisse—Jan 1936)  
 River defense. (Riv Art e Gen—Jan 1936)  
 Critical observations on antitank defense. (Sanct Chris—Jan 1936)  
 The employment of antitank weapons. (Sanct Chris—Feb 1936)  
 Defense against armored vehicles. (Sanct Chris—Mar 1936)

## Offensive Combat

Tactical doctrine up-to-date: Field Service Regulations, Part II, 1935. (A Quar—Jul 1936)  
 An analysis of tactical surprise. (A Quar—Jul 1936)  
 Tactical formations for the cavalry regiment. (Cav Jour—May-Jun 1936)  
 Battle of Picardy and the double penetration. (Inf Jour—May-Jun 1936)  
 The scorpion attack. (Inf Jour—May-Jun 1936)  
 Antitank defense. (Inf Jour—Jul-Aug 1936)  
 The semi-automatic rifleman. (MC Gaz—May 1936)  
 Field Service Regulations of the future. [See Section 1]  
 Divergent principles for meeting engagements based on German and French regulations. [See Section 2]  
 Combating artillery during the attack. (Mil-Woch—4 May 1936)  
 The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)  
 Warfare of the past and future. Motorized units in the offensive. (Rv Mil Fran—Jan 1936)  
 The employment of antitank weapons. (Sanct Chris—Feb 1936)

## Special Operations

Mine warfare on the Krain, 1917. (Mil Mitt—Jan 1936)  
 Defense of villages. (Rv Mil Suisse—Jan 1936)

## Troop Movements

Strategic movement over damaged railways in 1914. (Jour RUSI—May 1936)

## TANKS

Tactical doctrine up-to-date: Field Service Regulations, Part II, 1935. (A Quar—Jul 1936)  
 Achtung Tankminen!!! (Inf Jour—May-Jun 1936)  
 Tanks to order. (Inf Jour—May-Jun 1936)

Antitank defense. (Inf Jour—Jul-Aug 1936)  
 Tank doctrine. (Bul Belge Mil—Jan 1936)  
 Horse or motor power? Ideas on the organization and use of the antitank company of the infantry regiment. (Bul Belge Mil—Mar 1936)  
 Employment of tanks with an army. (Mil Mitt—Jan 1936)  
 Tanks for small nations. (Mil Mitt—Mar 1936)  
 A French conception on employment of tanks. (Mil-Woch—11 Mar 1936)  
 Tank warfare. (Mil-Woch—18 Mar 1936)  
 Tank experiences in the Chaco War. (Mil-Woch—18 Mar 1936)  
 The tank attack at Cambrai. (Mil-Woch—4 Apr 1936)  
 Antitank defense. (Mil-Woch—18 Apr 1936)  
 Super tanks and defense against them. (Mil-Woch—25 Apr 1936)  
 Antitank defense in defense and delaying action. (Mil-Woch—11 May 1936)  
 Correct or incorrect methods of antitank defense. (Mil-Woch—18 May 1936)  
 Infantry-tank liaison. (Rv d'Inf—Jan 1936)  
 Modern trends in foreign infantry. (Rv d'Inf—Feb 1936)  
 Defense of villages. (Rv Mil Suisse—Jan 1936)  
 Critical observations on antitank defense. (Sanct Chris—Jan 1936)  
 Armored and motorized units in the maneuvers of foreign armies. (Sanct Chris—Jan 1936)  
 My last tank attack. (Sanct Chris—Jan 1936)  
 The employment of antitank weapons. (Sanct Chris—Feb 1936)  
 New armored vehicles and anti-armor defensive weapons throughout the world. (Sanct Chris—Feb 1936)  
 Conduct of tanks when confronted with antitank mines. (Sanct Chris—Mar 1936)  
 Defense against armored vehicles. (Sanct Chris—Mar 1936)

## TOPOGRAPHY SURVEYING

## Aerial Surveying

Aerial photography on tropical surveys. (Mil Eng—May-Jun 1936)  
 Field developments in aerial mapping. (Mil Eng—May-Jun 1936)

## Maps Mapping

Field developments in aerial mapping. (Mil Eng—May-Jun 1936)  
 The air mapping of the North-West Frontier. (Roy Eng Jour—Jun 1936)

## TRANSPORTATION

The maintenance of field artillery motorized units and the control of its supply trains. (FA Jour—May-Jun 1936)  
 The Fourth Battalion. (Inf Jour—May-Jun 1936)  
 The equipping of field units with their mechanical transport vehicles. (RASC Quar—May 1936)  
 Medical aviation in North Africa and in French mandate territories of the Near East in 1914. (Bul Belge Mil—Feb 1936)  
 Motorized infantry. (Mil-Woch—4 Apr 1936)  
 1st Cavalry Division railroad at Maria, Texas, April-May 1936. (Cav Jour—May-Jun 1936)  
 Strategic movement over damaged railways in 1914. (Jour RUSI—May 1936)  
 Specialists of the Great Lakes. (Nav Inst Proc—Jul 1936)

## U

## UNITED STATES (ARMY OF)

## Auxiliary Military Forces

Teach them on the ground. (Inf Jour—May-Jun 1936)  
 As the twig is bent. (Inf Jour—Jul-Aug 1936)  
 Where do we go from here? (QM Rev—May-Jun 1936)  
 History of the Hawaii National Guard. (QM Rev—May-Jun, Jul-Aug 1936)

## US (NAVY)-WARS

### Command and Staff

American defence policy. (AN&AG Gaz—2 Jul 1936)  
Publicity and the service. (CA Jour—Jul-Aug 1936)  
May I publish this? (Inf Jour—May-Jun 1936)  
Legislation affecting the Medical Department. (Mil Surg—Jul 1936)

### Organization and Equipment

Lighter than air in 1936. (AN&AF Gaz—25 Jun 1936)  
The old army life. (FA Jour—May-Jun 1936)  
The new army game. (Inf Jour—May-Jun 1936)  
Let's have a new deal in uniform. (Inf Jour—Jul-Aug 1936)  
The infantry and the Medical Department in war. (Mil Surg—Aug 1936)

### Training

The old army life. (FA Jour—May-Jun 1936)  
Artillery notes on the Marfa maneuvers. (FA Jour—Jul-Aug 1936)  
Intensive training. (Inf Jour—May-Jun 1936)  
The Fourth Battalion. (Inf Jour—May-Jun 1936)  
Scrimmage. (Inf Jour—May-Jun 1936)  
Teach them on the ground. (Inf Jour—May-Jun 1936)  
Training for the next war. (Inf Jour—May-Jun 1936)  
S I C. (Security—Information—Contact.) (Inf Jour—May-Jun 1936)  
Kitchen soldiering. (Inf Jour—May-Jun 1936)  
Fighters must fight. (Inf Jour—May-Jun 1936)  
Sing something simple. (Inf Jour—May-Jun 1936)  
Sub-caliber maneuvers. (Inf Jour—Jul-Aug 1936)  
Where do we go from here? (QM Rev—May-Jun 1936)  
Field Service Regulations of the future. [See Section 1]

## UNITED STATES (NAVY OF)

### Command and Staff

Fleet Naval Reserve vs. retirement. (Nav Inst Proc—Jun 1936)  
Courage is not enough. (Nav Inst Proc—Jul 1936)  
More thoughts on selection. (Nav Inst Proc—Jul 1936)  
Fitness reports and selection. (Nav Inst Proc—Jul 1936)  
Selection and morale. (Nav Inst Proc—Aug 1936)  
Selection by merit. (Nav Inst Proc—Aug 1936)  
The Navy material inspection service. (Nav Inst Proc—Aug 1936)

### Organization and Equipment

Pressures against peace. (Nav Inst Proc—May 1936)  
Fleet Naval Reserve vs. retirement. (Nav Inst Proc—Jun 1936)  
The "Vincennes," world traveler of the old navy. (Nav Inst Proc—Jun 1936)

### Training

Pressures against peace. (Nav Inst Proc—May 1936)  
Impressions of duty with the CCC. (Nav Inst Proc—May 1936)  
Sea power in the American Revolution. (Nav Inst Proc—Jun 1936)

## V

## VETERINARY SERVICE

Diseases and injuries of animals of the 7th Cavalry on the marches and during the 1936 maneuvers of the 1st Cavalry Division. (Cav Jour—May-Jun 1936)  
Proposed two-wheeled ambulance trailer for veterinary cases. (Cav Jour—May-Jun 1936)  
"Mechanised" Veterinary Service. (Vet Bul—Apr 1936)

Veterinary services in Abyssinia. (Vet Bul—Apr 1936)

Veterinary statistics of the German Army for 1932. (Bul Belge Mil—Mar 1936)

## W

### WAR PEACE

Food supply the first line of defence. (AN&AF Gaz—21 May 1936)  
War reserve granaries. (AN&AF Gaz—4 Jun 1936)  
Food supply in war time. (AN&AF Gaz—16 Jul 1936)  
Military supply. Industry should be prepared for its war mission. (A Ord—Mar-Apr 1936)  
Oil and our national defense. (A Ord—Mar-Apr 1936)  
Preparedness. We should face the future with realistic minds. (A Ord—Mar-Apr 1936)  
Military prize essay, 1936. (A Quar—Jul 1936)  
The origin and causes of war. (Can Def Quar—Jul 1936)  
Gunpowder, guns, and civilization. (FA Jour—May-Jun 1936)  
Relations between the Government, the armed forces, and industry in the co-ordination of the national war effort. (Jour R Art—Jul 1936)  
Can methods of war be restricted? (Jour RUSI—May 1936)  
Pressures against peace. (Nav Inst Proc—May 1936)  
Field Service Regulations of the future. [See Section 1]  
Illusions concerning redistribution of essential raw materials. (Rv l'Air—Feb 1936)  
Industrial mobilization. (Rv Mil Fran—Feb 1936)  
War demands and their supply as a problem to military leaders. (Ws & Wr—Feb 1936)  
Industrial mobilization. (Ws & Wr—Mar 1936)

## WARS

### ANCIENT

A battleground of the ages. (Mil Eng—Jul-Aug 1936)

### AFRICA

## ITALY-ABYSSINIA (1935-1936)

Italy and Abyssinia. (A Quar—Jul 1936)  
The Italo-Abyssinian War. (Jour RUSI—May 1936)  
Veterinary services in Abyssinia. (Vet Bul—Apr 1936)  
Italy versus Abyssinia. (Mil-Woch—11 Mar-18 May 1936, incl.)  
Italian air force in the Abyssinian War. (Mil-Woch—11 Apr 1936)  
The origin of the Italo-Ethiopian relations. (Rv d'Art—Jan 1936)

### ASIA

## INDIA

### Early Wars ( -1813)

Lake and victory. (Cav Jour [GB]—Jul 1936)

## Sepoy Rebellion [Indian Mutiny] (1857-1858)

Memoirs of a fighting man during the Indian mutiny, being extracts from the diary of the late Sergeant Thomas Anderson, E Troop, Royal Horse Artillery. (A Quar—Jul 1936)

## JAPAN-RUSSIA (1904-1905)

The battle of the Yalu. (Fig Forc—Jun 1936)  
Appreciation of the situation at the outbreak of the Russo-Japanese War. (Jour USII—Apr 1936)

## JAPAN-CHINA (1931-1933)

The Japanese conquest of Jehol, 1933. (Cav Jour [GB]—Jul 1936)

EUROPE

**NAPOLEONIC WARS (1795-1815)**

Napoleon's employment of cavalry under the Consulate and Empire. (Cav Jour [GB]—Jul 1936)  
 Echoes of the past. A surgeon of the Royal Artillery. (Jour R Art—Jul 1936)

**RUSSIA-POLAND (1920)**

The Russo-Polish War, 1919-1920. [See Section 2]  
 The march on Kiev. (Rv de Cav—Jan-Feb 1936)

SOUTH AMERICA

**CHACO WAR (1932-1934)**

Tank experiences in the Chaco War. (Mil-Woch 13 Mar 1936)  
 Communications equipment and the radio in the Chaco War. (Mil-Woch—18 Apr 1936)  
 The cause, progress and lessons of the Chaco War, 1932-1935. (Ws & Wr—Jan 1936)

UNITED STATES

**INDIAN CAMPAIGNS**

**Later 19th Century (1865-1901)**

LITTLE BIG HORN (25-26 JUNE 1876)  
 New light on the Little Big Horn. (FA Jour—Jul-Aug 1936)

**REVOLUTION (1775-1783)**

The American invasion of Nova Scotia 1776-7. (Can Def Quar—Jul 1936)  
 Sea power in the American Revolution. (Nav Inst Proc—Jun 1936)

**WAR OF 1812 (1812-1814)**

Courage is not enough. (Nav Inst Proc—Jul 1936)  
 The case of Captain Lawrence. (Nav Inst Proc—Jul 1936)

**CIVIL WAR (1861-1865)**

Ordinance of the Confederacy. (A Ord—Mar-Apr 1936)  
 And an American. (Inf Jour—Jul-Aug 1936)  
 Watchful Gideon. (Nav Inst Proc—Aug 1936)  
 Picnic with Cushing. (Nav Inst Proc—Aug 1936)

**WORLD WAR (1914-1918)**

**E—General Military History**

The memoirs of General Fuller. (AN&AF Gaz—16 Apr 1936)  
 The Haig of Duff Cooper. (AN&AF Gaz—7 May 1936)  
 Allenby: An appreciation. (A Quar—Jul 1936)  
 The French Official History: 1st of May, 1918—18th of July, 1918. The Chemin des Dames. (A Quar—Jul 1936)  
 Harbord on the World War. (Mil Eng—May-Jun 1936)  
 Speech by M.A. Devezze, Minister of National Defense, at the inauguration of the memorial to King Albert. (Bul Belge Mil—Jan 1936)  
 Field Marshal Count von der Goltz. (Mil-Woch—11 Apr 1936)  
 General v. Seeckt. (Mil-Woch—25 Apr 1936)

**G—Arms and Services**

**AIR ARM**

Fighting for observation. (Inf Jour—May-Jun 1936)  
 Air intelligence—The army's safeguard. (RAF Quar—Jul 1936)  
 The French air division of 1918. (Mil-Woch—25 Mar 1936)

**ARTILLERY**

Bombardment of the Hartlepoons. (CA Jour—May-Jun 1936)

The last chance—Second campaign of the Marne. (FA Jour—May-Jun 1936)  
 Treatise on the 6-in. gun. (Jour R Art—Jul 1936)  
 The allotments of artillery in offensive actions from 1914 to 1918. (Bul Belge Mil—Mar 1936)  
 Production of arms and munitions in Austria-Hungary in 1916. (Riv Art e Gen—Nov-Dec 1935)

**CHEMICAL WARFARE SERVICE**

The gas attack at Ypres. (Chem War—Apr, Jul 1936)  
 Smoke in the World War. (Chem War—Jul 1936)

**CAVALRY**

The Yeomanry at Gaza. Part III (October 27th—November 6th, 1917). (Cav Jour [GB]—Jul 1936)  
 The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)

**ENGINEERS**

Germany's fortification at the beginning of the World War. (Pion—Feb 1936)  
 The forts of Verdun in battle. (Rv Mil Fran—Jan 1936)

**INFANTRY**

The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)  
 The French 17th Division and the German VIII Corps at Gedinne—Houdremont—Bievre—Monceau: 23 August 1914. (Rv d'Inf—Feb, Mar 1936)

**MACHINE GUNS**

Employment of motorized machine gun battalions. [See Section 2]

**MEDICAL SERVICE**

Medical tactics in mobile warfare. (Jour RAMC—Jun, Jul 1936)  
 War experiences of a Territorial medical officer. (Jour RAMC—May, Jun, Jul 1936)  
 Mess economy. (QM Rev—May-Jun 1936)

**QUARTERMASTER SERVICE**

Maintaining the motor transport of a field army. (QM Rev—May-Jun 1936)  
 Mess economy. (QM Rev—May-Jun 1936)  
 Behind the Bagdad front. (QM Rev—Jul-Aug 1936)

**SIGNAL SERVICE**

Imperial cable and wireless communications. (Jour USII—Apr 1936)

**TANKS**

Achtung Tankminen!!! (Inf Jour—May-Jun 1936)  
 The tank attack at Cambrai. (Mil-Woch—4 Apr 1936)  
 My last tank attack. (Sanct Chris—Jan 1936)

**H—Military Conduct of the War in the Field**

Allenby: An appreciation. (A Quar—Jul 1936)  
 The last chance—Second campaign of the Marne. (FA Jour—May-Jun 1936)  
 The turn of the worm—The Allies in the second Marne campaign. (FA Jour—Jul-Aug 1936)  
 Battle of Picardy and the double penetration. (Inf Jour—May-Jun 1936)  
 Treatise on the 6-in. gun. (Jour R Art—Jul 1936)  
 Souvenirs sur Foch. (Jour R Art—Jul 1936)  
 Strategic movement over damaged railways in 1914. (Jour RUSI—May 1936)  
 Behind the Bagdad front. (QM Rev—Jul-Aug 1936)  
 Air intelligence—The army's safeguard. (RAF Quar—Jul 1936)  
 Secret causes of German successes on the Eastern Front. (SC Bul—Jul-Aug 1936)  
 The landing at Anzac. [See Section 2]

The German plan for the attack of Liege in 1914. (Bul Belge Mil—Mar 1936)  
 The evacuation of the Baltic states by the Germans. (Bul Belge Mil—Mar 1936)  
 Mine warfare on the Krain, 1917. (Mil Mitt—Jan 1936)  
 Views on the surprise attack on Liege. (Mil-Woch—11 Mar 1936)  
 The dangerous experiment. (Mil-Woch—11 Apr 1936)  
 The operative role of the German western fortresses in 1914. (Mil-Woch—13 May 1936)  
 The breakthrough offensive at Neuve Chapelle, 1915. (Mil-Woch—18 May 1936)  
 The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)  
 Production of arms and munitions in Austria-Hungary in 1916. (Riv Art e Gen—Nov-Dec 1935)  
 The problem of General Headquarters and its solution in the World War. (Ws & Wr—Feb 1936)  
 1915 and the industrial war. (Ws & Wr—Feb 1936)

### J—Campaigns and Battles

#### ASIATIC AREA—TURKISH THEATER

Dardanelles (Gallipoli) Front  
 Gallipoli again. (Ftg Fore—Jun 1936)  
 An introduction to the Gallipoli Campaign. (MC Gaz—May 1936)  
 The landing at Anzac. [See Section 2]  
 Lessons from the Dardanelles Campaign, 1915. (Ws & Wr—Jan 1936)

#### Egyptian Front

War experiences of a Territorial medical officer. (Jour RAMC—May, Jun, Jul 1936)

#### Mesopotamian Front

Behind the Bagdad front. (QM Rev—May-Jun 1936)

#### Palestine Front

The Yeomanry at Gaza. Part III (October 27th—November 6th, 1917). (Cav Jour [GB]—Jul 1936)  
 Medical tactics in mobile warfare. (Jour RAMC—Jun, Jul 1936)

#### EUROPEAN AREA—ITALIAN THEATER

Mine warfare on the Krain. 1917. (Mil Mitt—Jan 1936)

#### EUROPEAN AREA—RUSSIAN THEATER

Secret causes of German successes on the Eastern Front. (SC Bul—Jul-Aug 1936)  
 Employment of motorized machine gun battalions. [See Section 2]  
 The evacuation of the Baltic states by the Germans. (Bul Belge Mil—Mar 1936)  
 The Northeast Offensive in 1915. (Mil-Woch—18 Mar 1936)  
 The dangerous experiment. (Mil-Woch—11 Apr 1936)  
 1915 and the industrial war. (Ws & Wr—Feb 1936)

#### EUROPEAN AREA—WESTERN THEATER

##### 1914

Air intelligence—The army's safeguard. (RAF Quar—Jul 1936)  
 The German plan for the attack of Liege in 1914. (Bul Belge Mil—Mar 1936)  
 Views on the surprise attack on Liege. (Mil-Woch—11 Mar 1936)  
 The operative role of the German western fortresses in 1914. (Mil-Woch—18 May 1936)  
 The action of the German III Cavalry Corps at La Garde (Lorraine) on 11 August 1914. (Rv de Cav—Jan-Feb 1936)

The French 17th Division and the German VIII Corps at Gedinne—Houdremont—Bievre—Monceau: 23 August 1914. (Rv d'Inf—Feb, Mar 1936)  
 Combat around Lille in 1914. (Rv Mil Fran—Feb 1936)

##### 1915

The gas attack at Ypres. (Chem War—Apr, Jul 1936)  
 The breakthrough offensive at Neuve Chapelle, 1915. (Mil-Woch—18 May 1936)

##### 1917

Treatise on the 6-in. gun. (Jour R Art—Jul 1936)  
 The forts of Verdun in battle. (Rv Mil Fran—Jan 1936)

##### 1918

The French Official History: 1st of May, 1918—18th of July, 1918. (A Quar—Jul 1936)  
 The last chance—Second campaign of the Marne. (FA Jour—May-Jun 1936)  
 The turn of the worm—The Allies in the second Marne campaign. (FA Jour—Jul-Aug 1936)  
 Battle of Picardy and the double penetration. (Inf Jour—May-Jun 1936)  
 Treatise on the 6-in. gun. (Jour R Art—Jul 1936)  
 The tank attack at Cambrai. (Mil-Woch—4 Apr 1936)  
 Rawlinson's Army in the Battle of 8 August 1918. (Rv Mil Fran—Mar 1936)  
 My last tank attack. (Sanct Chris—Jan 1936)

### L—Naval History

Jellicoe and Jutland. (AN&AF Gaz—23, 30 Apr 1936)  
 Bombardment of the Hartlepoons. (CA Jour—May-Jun 1936)  
 The invasion and capture of the Baltic Islands. (Inf Jour—Jul-Aug 1936)  
 An introduction to the Gallipoli Campaign. (MC Gaz—May 1936)  
 Jutland from S.M.S. B110. (Nav Inst Proc—May 1936)  
 The landing at Anzac. [See Section 2]  
 Lessons from the Dardanelles Campaign, 1915. (Ws & Wr—Jan 1936)  
 1915 and the industrial war. (Ws & Wr—Feb 1936)

### WEAPONS

Ordnance of the Confederacy. (A Ord—Mar-Apr 1936)  
 New standard 75-mm. artillery weapon. (A Ord—Mar-Apr 1936)  
 Gunpowder, guns, and civilization. (FA Jour—May-Jun 1936)  
 Treatise on the 6-in. gun. (Jour R Art—Jul 1936)  
 Can methods of warfare be restricted. (Jour RUSI—May 1936)  
 Pack howitzer battery in landing attack. (MC Gaz—May 1936)  
 The semi-automatic rifleman. (MC Gaz—May 1936)  
 Motorization in different armies. (Bul Belge Mil—Jan 1936)  
 The allotments of artillery in offensive actions from 1914 to 1918. (Bul Belge Mil—Mar 1936)  
 The question of a unified gun. (Mil Mitt—Jan 1936)  
 Combating automatic weapons in the attack. (Mil-Woch—11 Mar 1936)  
 The employment of the antitank company for march security. (Mil-Woch—11 Mar 1936)  
 Tank warfare. (Mil-Woch—18 Mar 1936)  
 Combating machine guns in the attack. (Mil-Woch—11 Apr 1936)  
 Aircraft armament. (Mil-Woch—18 May 1936)  
 Modern trends in foreign infantry. (Rv d'Inf—Feb 1936)  
 Infantry tactics. (Rv Mil Suisse—Jan, Feb, Mar 1936)

Production of arms and munitions in Austria-Hungary in 1916. (Riv Art e Gen—Nov-Dec 1935)

The employment of antitank weapons. (Sanct Chris—Feb 1936)

New armored vehicles and anti-armor defensive weapons throughout the world. (Sanct Chris—Feb 1936)

Defense against armored vehicles. (Sanct Chris—Mar 1936)

WELLES, Gideon (Secretary of the Navy) (1802-1878)

Watchful Gideon. (Nav Inst Proc—Aug 1936)

#### WITHDRAWAL

Employment of tanks with an army. (Mil Mitt—Jan 1936)

Germany: Action of a reinforced regiment during a withdrawal (Rv d'Inf—Feb 1936)